DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Skinner Landfill
West Chester, Butler County, Union Township, Ohio

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected final remedial action for the Skinner Landfill site in West Chester, Ohio, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the final remedy for this site. The information supporting this final remedial action decision is contained in the administrative record for this site.

The State of Ohio concurs with the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

This remedy is the second and final of two operable units for this site. The first operable unit addressed immediate site concerns, through the construction of a fence around the contaminated area, and by offering an alternate supply of drinking water to the potentially affected users of groundwater. This final operable unit addresses potential future migration of site contaminants into the groundwater and will limit the potential for direct exposure of site contaminants to humans through source control measures.

The selected remedy includes the following:

- construction of a RCRA cap over the waste materials;
- interception, collection, and treatment of contaminated groundwater;
- diversion of upgradient groundwater flow;
- monitoring;
- institutional controls; and
- soil vapor extraction.

DECLARATION

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilized permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable.

Because this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five years after the commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V

6/04/93
Date

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SITE NAME, LOCATION, AND DESCRIPTION

The Skinner Landfill site is located in West Chester, an unincorporated area in Section 22 of Union Township, Butler County, Ohio (see Figure 4).

The Skinner site is comprised of approximately 78 acres of hilly terrain. The site is bordered on the east by Conrail railroad tracks. Land use in the immediate site vicinity includes business and residential uses to the west and crop farming to the north. Cincinnati-Dayton Road borders the site to the west. The East Fork of Mill Creek runs through the southern portion of the site. The Union Elementary school is located immediately across Cincinnati-Dayton road to the west of the site. Approximately 6800 people live within 1 mile of the site.

The site was used in the past for the mining of sand and gravel, and was operated for the landfilling of a wide variety of materials from approximately 1934 through 1990. Materials deposited at the site include demolition debris, household refuse, and a wide variety of chemical wastes. A low area in the center of the site, referred to as the waste lagoon, was used for the disposal of paint wastes, ink wastes, creosote, pesticides, and other chemical wastes (see Figure 1).

Elevations at the site range from a high of nearly 800 feet above Mean Sea Level to the northeast, sloping generally southwestward, to a low of 645 feet near the confluence of Skinner Creek and the East Fork of Mill Creek. The natural topography of the site is obscured by piles of solid waste materials.

Several geologic units which underlie the site are used locally as aquifers. Groundwater at the site is contained in either the glacial drift aquifer or the bedrock aquifer. The glacial drift ranges from zero to 40 feet thick on the site, and is composed of layers of sand and gravel, and layers of silty to clayey materials. The thickness, composition and permeability of these layers vary greatly over the site, and this greatly complicates the flow of groundwater on the site. Groundwater also flows through fractures in the bedrock at the site. Nearby wells drilled into the bedrock are used for the supply of drinking water.

Both Skinner Creek and the East Fork of Mill Creek are small, shallow streams with low flow water depths averaging less than 1 foot. Both of these streams flow to the southwest from the Skinner Landfill site, toward Mill Creek, which in turn flows into the Ohio River. A third on-site stream, Dump creek, borders the former dump on the east. Dump Creek is intermittent, and flows south into the East Fork of Mill Creek.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

In 1976, in response to a fire on the site and reports of observations of a black, oily liquid in a waste lagoon on the site, the Ohio EPA began an investigation of the Skinner Landfill. Before the Ohio EPA could complete this investigation, the Skinners covered the waste lagoon with a layer of demolition debris, thereby hindering the investigation. Albert Skinner, the site owner at the time, dissuaded the Ohio EPA from accessing the lagoon area by claiming that nerve gas, mustard gas, incendiary bombs, phosphorus, flame throwers, cyanide ash, and other explosive devices were buried at the landfill. This prompted the Ohio EPA to request the assistance of the U.S. Army. Albert Skinner, in the presence of Ohio EPA attorneys and the U.S. Army investigators, subsequently retracted his claims of the presence of ordnance. The U.S. Army and Ohio EPA then dug several trenches into the buried waste lagoon, and found black and orange liquids and a number of barrels of wastes. Subsequently, records searches have been performed by the U.S. Army, and have indicated that there is no evidence of munitions of any sort having been disposed of at the Skinner Landfill site.

In 1982, the U.S. EPA conducted a limited investigation of the site for the purpose of scoring the Skinner Landfill site for inclusion on the National Priorities List (NPL). This investigation showed that the groundwater southeast of the buried waste lagoon was contaminated with volatile organic compounds. The Skinner Landfill site was placed on the NPL in December, 1982.

In 1986, the U.S. EPA began a Phase I Remedial Investigation, with the sampling of ground water, surface water, and soils. A biological survey of the East Fork of Mill Creek and Skinner Creek was also performed.

In 1989, the U.S. EPA began its Phase II Remedial Investigation ("Phase II RI"), to further investigate the site groundwater, surface water, soils, and sediments. Overall, more than 400 samples from the site were analyzed in chemical laboratories. The Remedial Investigation resulted in the installation of 33 soil borings, and 39 groundwater monitoring wells.

In August 1990, through a legal proceeding, the Ohio EPA closed the site to all further landfilling activities.

The Phase II Remedial Investigation was completed in May, 1991. The Feasibility Study was completed in April, 1992.

The U.S. EPA completed a search for potentially responsible parties (PRPs) in April 1983. The results of that search were later supplemented by information requests

under CERCLA § 104(e), and by administrative depositions held on June 17, 1991. The present site owner, Mrs. Elsa Morgan-Skinner, produced a large quantity of site records at her deposition. As a result of this information, U.S. EPA has produced a list of PRPs for this site.

A unilateral administrative order (UAO) for the first operable unit at the site, which encompasses site fencing, connections to the Butler County public water system for potentially affected local users of groundwater, and groundwater monitoring, was issued to the PRPs for the site on December 9, 1992. Several PRPs organized as the Skinner Landfill PRP Group and expressed their intent to comply with the UAO, and have now performed the majority of the work required under this UAO. Several other PRPs stated that they would not comply with the UAO.

COMMUNITY PARTICIPATION

During the course of the investigation, many meetings were held with the community, with a local activist group, and with a coalition of community representatives.

A fact sheet outlining U.S. EPA's plans for the investigation of the Skinner Landfill site was distributed to the public in March of 1986.

A fact sheet describing the results of Phase I of the Remedial Investigation (RI) and plans for the Phase II RI was distributed to the public in April of 1987.

A fact sheet describing the results of the Phase II RI and plans for the Baseline Risk Assessment (RA) and Feasibility Study (FS) was distributed to the public in June of 1991. Representatives of the U.S. EPA and the Ohio EPA held a public meeting in West Chester, Ohio on June 20, 1991 to discuss the results of the Phase II RI and plans for future activities at the Skinner site.

A fact sheet describing the results of the Feasibility Study, presenting the U.S. EPA's preferred alternative for a comprehensive cleanup of the entire Skinner Landfill site, and commencing a public comment period was distributed to the public in April, 1992. A component of this cleanup plan was on-site incineration of approximately 17,000 cubic yards of lagoon wastes. A public meeting to discuss the proposed plan and to gather public comments was held on May 20, 1992. A second public meeting on this subject was held on July 29, 1992. An ancillary purpose of this second public meeting was to present to the public the results of an assessment of the risks posed by the on-site incineration option, which had been requested at the May 20, 1992 public meeting. However, the July 29, 1992 public meeting was disrupted by a local activist group to the point that the risk

assessment information could not be adequately conveyed to the public. The July 29, 1992 public meeting lasted from 7:00pm until 1:45am.

Subsequent to the second public meeting, and due to concerns expressed by members of the public and by elected officials, the U.S. EPA decided to alter its decision-making approach for this site. On August 7, 1992, U.S. EPA mailed an announcement to members of the public and issued a news release, indicating that:

1) U.S. EPA proposed to select an interim remedy for this site, including the fencing of the contaminated portion of the site and the provision of alternative potable water supply to potentially affected homes;

2) The comment period for fencing and alternate water supply would end on August 31, 1992;

3) The comment period for the remaining portions of the remedy would remain open until further notice, in order to address community concerns.

The comment period for the remaining portions of the remedy did not close until February 9, 1993; in total the public comment period was nearly ten months long.

A coalition of various West Chester community groups and residents was formed after the July 29, 1992 public meeting in order to discuss the Skinner Landfill cleanup and to meet with the U.S. EPA and Ohio EPA. This coalition includes representatives from the Township Trustees, the Chamber of Commerce, Citizens Lobby for Environmental Action Now (C.L.E.A.N), the Lakota School Board, the Old West Chester Merchants Association, the Union School PTA, the Home Builders Association, the Firefighters/Service Group, and a number of Township Residents. The U.S. EPA and Ohio EPA met with this coalition approximately every other week for a period of three months. Topics discussed before this coalition included:

- site history;
- description of Remedial Investigation results;
- applicability of RCRA regulations;
- applicable or relevant and appropriate requirements for the site remedy;
- viability of containment remedies;
- assessment of site risks;
- proposals for further studies;
- alternative remediation technologies for the lagoon wastes; and
- the remedy selection process.

The discussions held with the Coalition were highly productive and resulted in a high degree of open communication and consensus-building. As a result of these discussions, this Coalition issued a unanimous written recommendation that a

containment remedy be implemented at the Skinner site. This recommendation is available for public review in the Administrative Record.

On January 11, 1993, the U.S. EPA issued a Fact Sheet announcing that its preferred alternative had changed from Alternative 5 (which included incineration), to Alternative 3 (a containment remedy that does not include incineration), with the possible inclusion of soil vapor extraction. This Fact Sheet, along with a press release and newspaper advertisements, announced that the public comment period would end on February 9, 1993.

On January 20, 1993, a legal representative of the Potentially Responsible Parties (PRPs) requested an additional 30-day extension of the public comment period. This request was denied, because the public comment period had already been open for nearly ten months.

SCOPE AND ROLE OF THE OPERABLE UNIT WITHIN THE OVERALL SITE STRATEGY

The U.S. EPA has organized the remedial action at the Skinner site into two phases, or "operable units." The first operable unit was an interim action to protect human health from any potential immediate risks. This was achieved by fencing the contaminated portions of the site to limit site access, to prevent ingestion of or direct contact with contaminated soils. This Interim Action also includes the provision of an alternate potable water supply to potentially affected downgradient users of groundwater, and groundwater monitoring, to protect the potentially affected users of groundwater on and near to the site. The Record of Decision for the first Operable Unit Interim Action was signed by the U.S. EPA Regional Administrator on September 30, 1992. A Unilateral Administrative Order for the implementation of the first Operable Unit was issued to 20 Potentially Responsible Parties (PRPs) on December 9, 1992.

This remedy is the second and final of two operable units for this site. This final operable unit addresses potential future migration of site contaminants into the groundwater and will limit the potential for direct exposure of site contaminants to humans through source control measures.

SUMMARY OF SITE CHARACTERISTICS

The site consists of the following contaminant source areas, as shown in Figure 1:

- a former dump, which was used for the disposal of a wide variety of waste materials;

- a buried waste lagoon, which was used for the disposal of a wide variety of liquid wastes and sludges;
- an active metal scrap yard;
- several buried waste pits.

A considerable amount of scrap metal, auto bodies, railroad cars, and associated junk is scattered over the site. Several residences are located on the site, including one which is used for child care of several young children.

The site was studied in the course of a two-phased remedial investigation. The results of these investigations are summarized below.

THE FORMER DUMP

The former dump area was used for the disposal of a variety of wastes, including demolition debris, household refuse, and assorted scrap. Chemical wastes also appear to have been disposed of in this area. Aerial photographs taken during the operation of the dump show piles of drums in various areas of the dump. These drums, if present, are now buried underneath other types of debris. A well (GW-22) was installed near the center of the former dump during the Remedial Investigation. Boring log information from this well indicates that the depth of fill is approximately 15 feet in this location. Observations at the eastern edge of the former dump indicated a fill thickness of over 30 feet. The total volume of wastes within the former dump is estimated to be 120,000 cubic yards. Water samples collected from GW-22 during the Phase I RI indicate that the most concentrated groundwater contamination found on the site is in the area beneath the former dump. This well is now buried under demolition debris deposited on the site by the Skinners. Ground water contaminants detected in GW-22 include:

Contaminant	Concentration
Phenol	670 parts per billion (ppb)
2-methyl phenol	450 ppb
4-methyl phenol	350 ppb
Acetone	4800 ppb
1,2-dichloroethane	4500 ppb
Benzene	20,000 ppb
Chlorobenzene	140 ppb
Ethylbenzene	100 ppb
2-hexanone	740 ppb
Methylene chloride	2200 ppb
Toluene	530 ppb
Xylenes	300 ppb

THE BURIED WASTE LAGOON AREA

Prior to 1976, a low-lying area containing a pond was used for the disposal of chemical wastes. Waste haulers were allowed to dump liquid wastes and drums of solid or semi-solid wastes into the pond, and to stack the drums in an area near the pond. Site records and deposition testimony of waste haulers indicate that large quantities of chemical wastes were deposited in the waste lagoon. These wastes include creosote, paint wastes, ink wastes, and pesticides. Nearby residents at the time reported that the wastes in the lagoon were causing fires and chemical odors. The Skinners eventually buried the waste lagoon under a layer of demolition debris up to 40 feet thick, and the lagoon is now inaccessible to the public. The debris which has been placed over and around the waste lagoon consists of wood, plastic, metal, brick, wire, glass, paper and rubber. It is estimated that 59,000 cubic yards of debris overlies the waste lagoon. The total volume of materials which are contaminated due to the disposal of wastes in the lagoon was estimated in the RI/FS to be 107,000 cubic yards.

The total volume of lagoon waste materials which exceed a 10^{-4} risk level was estimated in the FS to be 17,000 cubic yards. During the course of the Remedial Investigation 19 borings were installed in and around the buried waste lagoon in order to determine its composition and extent. Those borings which penetrated the waste lagoon itself encountered tarry materials, oily materials, and sticky, raspberry and turquoise colored liquids. A ground penetrating radar (GPR) survey of the lagoon area indicated the presence of a number of buried metallic objects which may be drums. Chemical analyses of samples of solid and semi-solid materials collected from borings drilled into the buried waste lagoon indicated the presence of a wide variety of chemical constituents. Maximum concentrations of some organic contaminants found in these samples follow:

Contaminant	Concentration
Toluene	31,000 parts per million (ppm)
Xylene	200 ppm
Ethylbenzene	98 ppm
1,1,2-trichloroethane	370 ppm
1,2-dichloropropane	340 ppm
Benzene	60 ppm
Naphthalene	610 ppm
2-methylnaphthalene	220 ppm
Phenanthrene	110 ppm
Bis(2-ethylhexyl)phthalate	150 ppm
Benzoic acid	1100 ppm
Fluoranthene	110 ppm
Pyrene	48 ppm

(continued)

Contaminant	Concentration
Hexachlorobenzene	480 ppm
Flourene	34 ppm
Phenol	26 ppm
Butylbenzylphthalate	25 ppm
1,3-dichlorobenzene	230 ppm
1,4-dichlorobenzene	180 ppm
Hexachlorobutadiene	68 ppm
Acenaphthene	7.9 ppm
Benzo(a)anthracene	15 ppm
Chrysene	17 ppm
Hexachlorocyclopentadiene	1100 ppm

Analysis of these same buried waste lagoon samples for pesticides indicated the presence of the following:

Contaminant	Concentration
Heptachlor	52 ppm
Endrin ketone	84 ppm
Gamma chlordane	44 ppm

The following metals were detected at concentrations considerably above background levels in the lagoon wastes:

Contaminant	Concentration
Antimony	23 ppm
Cadmium	56.9 ppm
Lead	4360 ppm
Silver	13 ppm
Thallium	1 ppm

Low levels of dioxins, furans, and PCBs were detected in some lagoon waste samples. The concentrations od dioxins ranged up to approximately 29 parts per trillion. PCB concentrations ranged up to 1.2 parts per million.

Two groundwater monitoring wells located downgradient to the southwest of the lagoon area (GW-20 and B-5) were found to be contaminated. The following are the maximum concentrations of selected organic contaminants found in samples collected from these wells:

Contaminant	Concentration
1,1,2,2-tetrachloroethylene	6 ppb
1,1,2-trichloroethane	56 ppb
1,1-dichloroethane	73 ppb
1,2-dichloroethane	180 ppb
1,2-dichloroethene	35 ppb
1,2-dichloropropane	370 ppb
Benzene	410 ppb
Chloroethane	50 ppb
Chloroform	85 ppb
Trichloroethene	71 ppb
Vinyl chloride	48 ppb
1,3-dichlorobenzene	13 ppb
1,4-dichlorobenzene	10 ppb
Benzoic acid	5 ppb
Bis(chloroethyl)ether	130 ppb
Naphthalene	14 ppb

Many of the contaminants which were found in the groundwater in these wells, which are located downgradient of the waste lagoon, were also found in the waste lagoon materials. Furthermore, several of the contaminants found in these wells were detected in the former dump area, which is upgradient of the buried waste lagoon. By contrast, groundwater collected upgradient of the former dump did not contain these contaminants. Therefore, it has been established that the contamination present in groundwater beneath and downgradient of the former dump and buried waste lagoon is attributable to the wastes present in the former dump and waste lagoon.

BURIED PITS AND OTHER CONTAMINATED SOILS

A low-lying area in the south-central portion of the site, to the east of the Skinner residence, was used for waste disposal (see Figure 1). Three borings were drilled in this area, and indicate that the fill materials are up to 18 feet thick. Analysis of solid materials taken from these borings indicated the presence of relatively low concentrations of acetone, methylene chloride, pyrene, fluoranthene, and benzo(b)fluoranthene (see Table 2-16). The volume of impacted soils in the buried pit is estimated to be 500 cubic yards.

Contaminated soils were also detected near wells GW-29 and GW-38. The volumes of contaminated soils in these areas are estimated to be 1000 and 1600 cubic yards, respectively.

METAL STORAGE AREA

The area immediately to the west of the former dump is occupied by an active scrap metal operation. A considerable volume of metal parts, motors, and structures is present in this area. Soil samples taken from this area indicated the presence of low levels of several organic contaminants, as would be expected in any metal scrap yard. Groundwater monitoring wells installed around the metal storage area indicate that this portion of the site is not a significant source of groundwater contamination.

SURFACE WATERS

There are three small ponds on or near the site. The Duck pond straddles the northern site boundary. The Diving Pond and Trilobite Pond are located immediately to the west of the metals storage area (see Figure 1).

The Skinner Landfill lies 1.5 miles east of the floodplain of Mill Creek, a major south-flowing tributary of the Ohio River. Skinner Creek and the East Fork of Mill Creek flow towards the southwest from the Skinner site into Mill Creek. Dump Creek borders the former dump to the east, and is partially covered with fill materials.

Samples of water and sediments taken from the ponds and creeks were collected and analyzed in the course of the Remedial Investigation. Results of these analyses indicate that contaminants are present in the creeks at insignificant levels, and only very low levels in the ponds. The creek and pond sediments are contaminated at low concentrations with volatile and semivolatile organic compounds (see Table 2-16).

Analysis of contaminated groundwater which is being discharged to the East fork of Mill Creek via leachate seeps indicates the presence of low concentrations of chloroform, trichloroethane, methylene chloride, benzene and acetone (see Table 2-16).

LEACHATE SEEPS

At several locations along the East Fork of Mill Creek to the south of the buried waste lagoon and former dump, contaminated groundwater discharges to the ground surface. These discharges are referred to as leachate seeps. Samples of

liquids from the leachate seeps were collected and analyzed by the U.S. EPA during the RI, and subsequently by the Ohio EPA. The maximum concentrations of these contaminants detected during these several rounds of sampling and analysis are listed below.

CONTAMINANT	CONCENTRATION
Benzene	26 parts per billion (ppb)
Chloroethane	2 ppb
1,1-dichloroethane	11 ppb
Bis(2-chloroethyl)ether	120 ppb
Hexachlorobutadiene	0.016 ppb

SITE GEOLOGY AND HYDROGEOLOGY

Subsurface materials at the Skinner Landfill are quite variable throughout the site. This variability affects the manner in which chemicals move through the ground. The unconsolidated glacial sediments that underlie the Skinner Landfill are a mixture of soil types ranging from clay-rich to gravel-rich soils, and are from zero to 40 feet thick. Soils under the northern and western parts of the buried waste lagoon consist of low-permeability silty clays. The soils underlying the southern and southeastern parts of the buried lagoon are more permeable silty sand and gravel deposits. Soil boring samples collected from the buried lagoon area show that the highest concentrations of organic chemicals underlie the southern part of the lagoon. The more permeable soils underlying this part of the lagoon may enable the chemicals to more readily migrate through the soil into the groundwater. Those chemicals, such as volatile and some semi-volatile organic compounds, are mobile and can be transported through permeable sand and gravel soils underlying parts of the buried lagoon. It is clear from the groundwater monitoring data that chemicals from the buried waste lagoon and former dump are moving through the soil and waste into the on-site groundwater.

Groundwater at the site is contained in either the glacial sediment aquifer or the bedrock aquifer. Groundwater flow at the Skinner site is complicated by the site geology, especially the extreme variability in the nature of the sediments that comprise the unconsolidated glacial materials underlying most of the site. The glacial deposits include a number of discontinuous zones of silty to clayey materials, and layers of sand and gravel. Depth of the water table on site varies from as shallow as 0-6 feet below the surface in the Skinner Creek valley to as deep as 30-40 feet below the ground surface immediately to the south of the buried lagoon. The porous and permeable sand and gravel deposits on site readily store and transmit groundwater, which may contribute to the migration of site contaminants. The low-permeability silty clays, as well as the underlying

interbedded shale-limestone bedrock, are poor transmitters and producers of groundwater, and thus limit the movement of groundwater and contaminants. Groundwater movement is restricted by site geology and topography in all directions except toward the southwest.

On-site aquifers discharge to the on-site streams, thereby providing a mechanism for transport of chemicals off-site. However, significant off-site migration of contaminants appears not to have occurred to date. Monitoring data indicate the presence of low concentrations of site-related chemicals in on-site ponds and very low levels in on-site streams.

SUMMARY OF SITE RISKS

Because the Skinner Landfill accepted a variety of wastes from 1934 until it was closed in 1990, numerous chemicals are present at the site. Following the RI, U.S. EPA conducted an evaluation to estimate the potential health or environmental problems that could result if the site was not remediated. This analysis is referred to as the Baseline Risk Assessment (RA). U.S EPA evaluated the health risks associated with 114 different contaminants. A list of these chemicals is attached as Table 2-16, and includes inorganic, volatile and semi-volatile organic chemicals, pesticides, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), dioxins and furans. Those contaminants contributing the most significantly to current and future site risks included: volatile organics, such as carbon tetrachloride, vinyl chloride, benzene, chloroform, dichloroethene and bis (2-chloroethyl) ether; pesticides, such as heptachlor, aldrin, dieldrin, chlordane, chlordene, and hexachlorobenzene; PCBs, specifically Arochlor 1254; and inorganics, such as arsenic and cobalt.

EXPOSURE PATHWAYS

The potential migration pathways for site contaminants include leaching from the soils to the ground water, movement of contaminated ground water to surface water and sediments, and volatilization of chemicals to air from water and soils. The air pathway is not considered significant for this site under present conditions. Sampling has indicated that concentrations of volatile chemicals in surface soils and water do not represent a significant source of concern for air. Additionally, the depth of contaminated soils in the waste lagoon limits the emission of these chemicals to air.

Currently, the only evidence of contaminants potentially leaving the site through groundwater migration is the detection of 5 ppb of ethylbenzene in monitoring well GW-24, which is located across the East Fork of Mill Creek from the buried lagoon (see Figure 1). The only potential off-site routes of migration for surface water and

surface water sediments are through the East Fork of Mill Creek and Skinner Creek. The leachate seeps which discharge into the East Fork of Mill Creek appear to originate from within the buried waste lagoon and the former dump and clearly indicate a pathway for off-site migration of contaminants.

The Risk Assessment showed that the potential routes of current and future exposure include: ingestion of and direct contact with contaminated soils; ingestion of affected groundwater; dermal contact with groundwater; inhalation of chemicals that volatilize from groundwater to air during showering; and, ingestion of and direct contact with surface water and sediments during recreational activities. Inhalation of fugitive dust and volatile chemicals was also evaluated qualitatively as a potential exposure route but did not warrant a quantitative assessment because emissions from surface soil would likely be low. This is because the most contaminated portion of the site, the buried waste lagoon, is covered by up to 40 feet of demolition debris and is not considered a source of air risk under the current conditions.

HUMAN HEALTH RISK

Human health risks at Superfund sites are typically assessed with respect to both carcinogenic and noncarcinogenic adverse effects of a chemical, under current and future exposure scenarios. The current and potentially exposed populations are occupational workers at the site, residents living on and near the site, and persons who may recreate in the area. Cancer risks from various exposure pathways are assumed to be additive. The Risk Assessment showed that currently none of the residents living, working, recreating, or attending school near the site are exposed to any site-related risks considered unacceptable by the U.S. EPA. Unacceptable risks are those that may result in one additional cancer case in 10,000 to 1,000,000 people (10^{-4} to 10^{-6}) exposed over a lifetime (70 years). However, the risks to persons currently living, working or recreating on the site are considered unacceptable in that they exceed one additional cancer case in 100 persons exposed over a lifetime.

The primary future potentially exposed populations are residential, recreational and occupational. The risks for the future potentially exposed residential population were assessed using both the assumptions that the waste lagoon was and was not developed for residential use. The future risks calculated for persons living, working, or recreating at the site were considered unacceptable in that they exceeded U.S. EPA's acceptable risk range. The risks using the assumption that the waste lagoon was not developed for future residential use were slightly lower, but still exceeded one in 1,000.

Non-cancer risks are evaluated with respect to a hazard quotient, which is the ratio of the level of exposure to an acceptable level. If the hazard quotient for an

exposed individual or group exceeds 1.0 for a particular chemical, there may be non-cancer health effects resulting from the exposure to that chemical. If the hazard index, which is the sum of the hazard quotients for all chemicals in a particular medium, exceeds 1.0 there may be a concern for potential health effects from exposure to that medium. The RA showed that the hazard indices at the Skinner site exceeded 1.0, suggesting that both current and future exposures to chemicals of concern on the site may result in excess noncancer risks to all populations.

ENVIRONMENTAL RISK

The potential future impacts of the site wastes on the East Fork of Mill Creek were estimated in the Risk Assessment. It was projected that, under the "No Action" scenario, surface water standards may be exceeded in the future in the East Fork of Mill Creek for the following compounds: benzene, carbon tetrachloride, chloroform, 1,1,2,2-tetrachloroethane, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, bis(2-chloroethyl)ether, phenol, aldrin, dieldrin, and Aroclor 1254.

The Ohio EPA Division of Water Quality, Planning, and Assessment (DWQPA) recently completed a biological and water quality study of the Mill Creek Basin. Sampling sites for the East Fork of Mill Creek included two areas which bracketed the Skinner Landfill site. Both sampling sites exhibited good habitat conditions. No impairment of the fish community was observed at the sampling location immediately downstream of the Skinner Landfill site. No violations of water quality standards were detected either upstream or downstream of the landfill.

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, and the environment.

DESCRIPTION OF ALTERNATIVES

The proposed plan for this site presented five alternatives. Remedial alternatives were assembled from applicable remedial technology process options and were initially evaluated for effectiveness, implementability, and cost. The alternatives meeting these criteria were then evaluated and compared to the nine criteria as required by the NCP. The first was a no action alternative, which is evaluated at all Superfund sites in order to assess the potential risk to the public if no cleanup was done. The no action alternative serves primarily as a point of comparison for other alternatives. The other four alternatives evaluated a range of source control

response options. Each of the options, excepting the "no action" alternative, included identical provisions for fencing and provision of an alternate potable water supply. Since the fencing and provision of an alternate potable water supply were addressed in the first operable unit interim action ROD, they are not included in the following descriptions of alternatives.

ALTERNATIVE 1 NO ACTION

The Superfund program requires that the "no action" alternative be considered at every site. Under this alternative, the U.S. EPA would take no action to control the site or to limit the potential migration of the wastes. There are no costs associated with the no action alternative.

ALTERNATIVE 2

- ***EXCAVATION AND ON-SITE INCINERATION OF BURIED WASTE LAGOON SOILS***
- ***MULTI-LAYERED CAPPING OF REMAINING WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***DEED RESTRICTIONS***

Under this option, the waste materials in the buried waste lagoon which exceed the 10^{-4} risk level would be excavated and treated using an on-site incinerator. A mobile incinerator would be brought onto the site, and operated for approximately seven months in accordance with ARARs relating to RCRA Hazardous Waste incinerators. An estimated 17,000 cubic yards of lagoon waste materials would be incinerated. The resultant ash would be disposed of on-site in a lined cell and stabilized, if necessary. Treatability testing would be required in order to implement the design of the incinerator and for stabilization of the ash.

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;

- A drainage layer would be installed over the membrane. This can be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Capital Costs: $22,810,000
Annual O & M Costs: $382,000
Net Present Value Cost: $28,700,000

ALTERNATIVE 3

- *CONSOLIDATION AND MULTI-LAYERED CAPPING OF WASTE MATERIALS*
- *COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER*
- *DIVERSION OF UP-GRADIENT GROUNDWATER FLOW*
- *DEED RESTRICTIONS*

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;
- A drainage layer would be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

The addition of soil vapor extraction in the area near to and underneath the buried waste lagoon to alternative three was suggested during the public comment period. This addition is discussed below.

Capital Costs: $9,619,000
Annual O & M Costs: $382,000
Net Present Value Cost: $15,500,000

SOIL VAPOR EXTRACTION

During the public comment period, it was suggested that extraction of the volatile organic vapors from the permeable materials surrounding the lagoon wastes be considered as an addition to alternative #3. Soil Vapor Extraction has previously been a component of Alternative 5 only; these costs are already included in Alternative 5. Soil vapor extraction is a technology whereby air containing organic vapors is pumped out of the ground. The air is then treated to meet air emission standards prior to release.

Capital Costs: $81,900
Annual O & M Costs: $15,000
Net Present Value Cost: $531,900

COSTS OF ALTERNATIVE 3 WITH THE INCLUSION OF SOIL VAPOR EXTRACTION

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

ALTERNATIVE 4

- ***CONSOLIDATION AND SINGLE-LAYERED CAPPING OF WASTE MATERIALS***
- ***COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER***
- ***DIVERSION OF UP-GRADIENT GROUNDWATER FLOW***
- ***DEED RESTRICTIONS***

A single-layered cap would be constructed over the area covered by the former dump and the former waste lagoon. This would consist of the following layers, starting from the bottom:

- twenty four inches of clay;
- a thirty mil polymeric membrane;
- six inches of sand with a geotextile fabric base;
- a biotic barrier consisting of six inches of cobbles and six inches of gravel;
- a second geotextile layer;
- twenty inches of topsoil, and
- vegetation.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Capital Costs: $8,914,000
Annual O&M Costs: $382,000
Net Present Value Cost: $14,800,000

ALTERNATIVE 5

- *EXCAVATION AND ON-SITE INCINERATION OF BURIED WASTE LAGOON SOILS*
- *MULTI-LAYERED CAPPING OF REMAINING WASTE MATERIALS*
- *COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER*
- *DIVERSION OF UP-GRADIENT GROUNDWATER FLOW*
- *SOIL VAPOR EXTRACTION*
- *DEED RESTRICTIONS*

Under this option, the waste materials in the buried waste lagoon which exceed the 10^{-4} risk level would be excavated and treated using an on-site incinerator. A mobile incinerator would be brought onto the site, and operated for approximately seven months in accordance with ARARs relating to RCRA Hazardous Waste incinerators. An estimated 17,000 cubic yards of lagoon waste materials would be incinerated. The resultant ash would be disposed of on-site in a lined cell and stabilized, if necessary. Treatability testing would be required in order to implement the design of the incinerator and for stabilization of the ash.

A multi-layered RCRA cap would be constructed over the area covered by the former dump and the buried waste lagoon. The cap would consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand would be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials would adequately perform this function, and that construction of a venting layer would not be necessary;
- A twenty-four inch thick layer of clay would be installed, and constructed in a manner which would achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane would be installed over the clay layer;
- A drainage layer would be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier would overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This would typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil would be installed on the top of the intrusion barrier;
- Vegetatation would be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the top of

the clay layer would be at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, would be dug up and moved onto the area to be covered by the cap. The cap design would provide for the venting of gases from the waste materials.

Groundwater in the unconsolidated materials would be prevented from flowing onto the site from the upgradient direction. This may be achieved by installing a barrier wall, such as a slurry wall, vibrating beam, or grout curtain.

Contaminated groundwater which flows from the site toward the East Fork of Mill Creek would be intercepted, collected, treated and then discharged. Discharge options for the treated groundwater would be evaluated during the remedial design. The treated water would be required to meet ARARs (see Attachment 3)

The site would be monitored for migration of contaminants to groundwater and surface water. Site-specific groundwater trigger levels are given in Table 1 (attached).

Deed restrictions would be emplaced, which would limit the potential for activities which would tend to interfere with the performance of the remedy.

Volatile organic vapors from the permeable soils in the area around the buried waste lagoon would be treated using Soil Vapor Extraction. Volatiles would be withdrawn from the ground and treated.

Capital Costs: $2[illegible] 920,000
Annual O & M Costs: $397,000
Net Present Value Cost: $29,000,000

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The remedial alternatives developed during the Feasibility Study were evaluated by the U.S. EPA using the following nine criteria. The advantages and disadvantages of each alternative were then compared to determine which alternative provided the best balance among these nine criteria. These criteria are set forth in the National Contingency Plan, 40 CFR Part 300.430.

CRITERION 1: OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

***Overall Protection of Human Health and the Environment** addresses whether a remedy provides adequate protection and describes how risks through each pathway are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.*

The cap and groundwater controls which are included in alternatives 2 through 5 provide protection of human health and the environment by reducing the potential for migration of contaminants away from the site. The multi-layered cap (Alternatives 2, 3 and 5) will provide a greater reduction of infiltration of water through the waste materials than would be provided by the single layered cap (Alternative 4), and therefore will provide a greater reduction in the potential for migration of contaminants away from the site. The cap, in conjunction with the fencing and deed restrictions, will effectively prevent people from physically contacting the wastes.

Incineration of the materials in the buried waste lagoon (Alternatives 2 and 5) would destroy the organic components of the lagoon wastes, and therefore eliminate any potential for future off-site migration of these materials. Additionally, the potential stabilization of the ash resulting from the incineration process would provide effective immobilization of any inorganic materials which remained.

However, it must be recognized that the lagoon wastes are only a portion of the contaminated materials which are present at the site. Under any alternative, all of the contaminated materials in the former dump will remain on-site. While incineration of the waste lagoon materials would eliminate the possibility of future migration of the organic lagoon wastes, it would not affect the large amount of remaining contaminated materials.

CRITERION 2: COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

***Compliance with Applicable or Relevant and Appropriate Requirements** addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements (ARARs) or other environmental statutes and/or provide grounds for invoking a waiver.*

Applicable requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal

or State environmental or facility siting law that specifically address a hazardous substance, pollutant contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to this particular site. ARARs are divided into chemical specific, action specific, and location specific groups.

A State of Ohio facility siting law containing a facility-setback provision has been identified as a potential ARAR for alternatives 2 and 5. This law, found at Ohio Rev. Code Sec. 3734.05(D)(6)(g), has been referred to as the "2000-foot rule". The law prohibits, with various exceptions, the location of a new hazardous waste facility within 2000 feet of any residence, school, hospital, jail, or prison.

A waiver of this provision may have been required for the implementation of either of the alternatives which include incineration (alternatives 2 and 5), due to the specific administrative requirements of this provision. A waiver is not necessary for the location of a soil vapor extraction system within the setback zone, because such system is not a "hazardous waste facility" within the meaning of Ohio law.

CRITERION 3: LONG-TERM EFFECTIVENESS AND PERMANENCE

***Long-term Effectiveness and Permanence** refers to the ability of a remedy to maintain reliable protection of human health and the environment over time. This criterion includes the consideration of residual risk and the adequacy and reliability of controls.*

All of the alternatives, with the exception of the No Action alternative, are believed to result in minimal residual risk. All of the alternatives are designed to limit the potential for the future migration of contaminants off of the site.

Alternatives 2 and 5 would achieve permanent destruction of the most toxic and hazardous organic wastes within the buried waste lagoon through incineration.

Alternative 5 and alternative 3, as modified, provide for permanent removal and destruction of volatile organic compounds drawn from the permeable materials which underlie portions of the buried waste lagoon through soil vapor extraction.

The capping and groundwater controls which are components of alternatives 2 through 5 are considered to be effective over the long term for the minimization of contaminant migration and the prevention of surface exposure, but will require long-term maintenance and monitoring in order to retain their effectiveness.

Under any alternative, all of the contaminated materials in the former dump will remain on-site. While incineration of the waste lagoon materials would achieve permanent destruction of the organic wastes in the buried waste lagoon, it would not affect the large amount of remaining contaminated materials.

CRITERION 4: REDUCTION IN TOXICITY, MOBILITY OR VOLUME

***Reduction of Toxicity, Mobility or Volume** is the anticipated performance of the treatment technologies a remedy may employ.*

Reductions in the Toxicity of wastes on the site would be achieved through those alternatives which include incineration and/or treatment of materials removed through soil vapor extraction (Alternatives 2 and 5). Toxicity would be reduced by thermally destroying the organic waste materials.

All of the alternatives, with the exception of the No Action alternative, are believed to provide reductions in the mobility of the waste materials, through capping and control of contaminated groundwater. The options which include a multi-layered cap (numbers 2, 3, and 5) have a slight advantage over alternative 4, which relies on a single-layered cap. This is because the infiltration of precipitation through the waste materials would be reduced to a greater extent by a multi-layered cap than it would be by a single-layered cap.

Reduction in the Toxicity, Mobility and Volume of contaminants found in the groundwater will be achieved through treatment of contaminated groundwater.

The incineration alternatives would eliminate any potential for future mobility of the organic contaminants within the lagoon wastes, because these materials would be destroyed. The incineration alternatives would also

provide for reduction in the mobility of metals in the lagoon wastes, if the incinerator ash was stabilized.

Soil Vapor Extraction would provide for the removal of volatile organic contaminants from the area around the waste lagoon. These volatile compounds will then be collected and treated. This would provide for reduction in toxicity, mobility, and volume of volatile organic contaminants.

CRITERION 5: SHORT-TERM EFFECTIVENESS

Short-term Effectiveness *refers to the period of time needed to complete the remedy and any adverse impact on human health and the environment that may be posed during the construction and implementation of the remedy.*

Alternatives 2 and 5 involve excavation and incineration of the buried waste lagoon materials. Short-term risks are associated with these portions of the remedial action. This is largely because of the presence of a large variety of contaminants within the waste lagoon, which could potentially be released to the environment during excavation. These releases could be mitigated to a large degree through engineering controls such as physical enclosures, or through application of liquids or foam to cover the exposed areas. Short-term risks associated with the incineration were projected to fall within the acceptable risk range.

Alternatives 2 through 5 include the excavation and movement of contaminated soils from outside of the area to be capped to the capped area. This is expected to result in minimal short-term risks. Some movement of materials within the area to be capped may also be required in order to maintain acceptable slopes. This movement will be conducted in a manner which will limit the disturbance of waste materials.

The remedial construction for the containment alternatives (Alternatives 3 and 4) is projected to last 1 to 2 years. The remedial construction for the alternatives which include incineration (Alternatives 2 and 5) is projected to last 3 to 4 years. Considerable administrative delays may have been encountered during the implementation of incineration at this site, thereby decreasing the short-term effectiveness.

CRITERION 6: IMPLEMENTABILITY

***Implementability** is the technical and administrative feasibility of a remedy, including the availability of goods and services needed to implement the chosen solution.*

All of the alternatives (except the No Action alternative) are composed of proven, off-the-shelf technologies, and are therefore considered technically implementable.

Practically, the administrative implementability of an incineration remedy for this site is poor. It appears likely that many years of administrative effort could be required before incineration would be implemented at this site. Intense community relations efforts would be required, and extensive legal challenges could reasonably be anticipated.

CRITERION 7: COST

Cost includes capital and operation and maintenance costs.

The costs of the alternatives were calculated in the Feasibility Study, and are listed below:

ALTERNATIVE 1

No Cost

ALTERNATIVE 2

Capital Costs: $22,810,000
Annual O & M Costs: $382,000
Net Present Value Cost: $28,700,000

ALTERNATIVE 3

Capital Costs: $9,619,000
Annual O & M Costs: $382,000
Net Present Value Cost: $15,500,000

ALTERNATIVE 3 WITH SOIL VAPOR EXTRACTION

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

ALTERNATIVE 4

Capital Costs: $8,914,000
Annual O&M Costs: $382,000
Net Present Value Cost: $14,800,000

ALTERNATIVE 5

Capital Costs: $22,920,000
Annual O & M Costs: $397,000
Net Present Value Cost: $29,000,000

CRITERION 8: STATE ACCEPTANCE

***State Acceptance** indicates whether, based on its review of the RI/FS and Proposed Plan, the State of Ohio concurs, opposes, or has no comment on the preferred alternative.*

The State of Ohio concurs with the selected remedy.

CRITERION 9: COMMUNITY ACCEPTANCE

***Community Acceptance** is assessed in the Record of Decision following a review of the public comments received on the FS report and the Proposed Plan.*

The Skinner Landfill Coalition, representing a cross-section of the community, has recommended a containment remedy which closely parallels the selected alternative.

Many comments were made during the public comment period in opposition to incineration. Some commenters expressed support for incineration. The U.S. EPA continues to believe that incineration is a viable and effective technology which could be safely applied at the Skinner site. However, U.S. EPA does not believe that community acceptance of incineration can be

readily obtained at the Skinner site.

Public reaction to U.S. EPA's announcement of a shift in preference from incineration to containment was generally favorable. Community acceptance of the selected remedy appears to be strong.

SELECTED REMEDY: ALTERNATIVE 3 WITH THE INCLUSION OF SOIL VAPOR EXTRACTION

Capping

A multi-layered RCRA cap will be constructed over the area covered by the former dump and the buried waste lagoon. The minimum extent of this cap is shown in Figure 2. The purpose of this cap is to minimize the infiltration of water from precipitation through the contaminated waste materials. The cap will consist of the following layers, starting at the bottom:

- Immediately above the waste materials, a layer of permeable materials such as sand will be installed, if necessary, for the purpose of venting the gases which result from the decomposition of waste materials. It is possible that the existing cover materials will adequately perform this function, and that construction of a venting layer will not be necessary;
- A twenty-four inch thick layer of clay will be installed, and constructed in a manner which will achieve a maximum permeability of 10^{-7} cm/sec;
- A thirty mil thick flexible membrane will be installed over the clay layer;
- A drainage layer will be installed over the membrane. This may be achieved using six inches of sand with a geotextile fabric base, or by using various commercially available synthetic products;
- An intrusion barrier will overlie the drainage layer. This is intended to limit the possibility of intrusion into the waste materials by burrowing animals. This will typically be composed of six inches of cobbles and six inches of gravel;
- A twenty inch thick layer of soil will be installed on the top of the intrusion barrier;
- Vegetatation will be planted and maintained on the cap, in a manner so as to minimize the potential for erosion.

In order to prevent damage to the clay layer through frost penetration, the cap shall be constructed so that the top of the clay layer is at least 30 inches below the top surface of the cap.

Any contaminated materials outside of the area to be capped, such as the waste pit soils, will be dug up and moved onto the area to be covered by the cap. The cap design will provide for the venting of gases from the waste materials.

The cap will be constructed so that the slope will not exceed 5% to the maximum extent practicable. However, this will not be possible in certain portions of the site, such as the eastern edge of the former dump, where there is a precipitous drop-off. In order to provide a structurally stable cap in these areas, it is anticipated that concrete retaining walls or similar structures will need to be constructed. It is possible that some waste materials will have to be moved in order to facilitate the construction of the cap. The cap shall be designed in a manner which will minimize the amount of contaminated waste materials to be moved. Any such movement will be conducted in such as manner so as to minimize the release of contaminants to the environment.

Contaminated soils and waste materials from the buried pit area which exceed the concentrations listed in Table 2 shall be excavated and placed under the cap. Soils in the areas near wells GW-29 and GW-38 (see Figure 1) shall be evaluated for potential consolidation under the cap. In the course of the remediation, it is possible that other contaminated areas which lie outside of the capped area will be encountered. Any such additional materials may be consolidated under the cap.

Downgradient groundwater control

Contaminated groundwater downgradient of the area to be capped will be intercepted, captured, and treated.

- *Interception of contaminated groundwater:* Contaminated groundwater is present downgradient of the area to be capped. Contaminated groundwater shall be defined as that which contains contaminant concentrations exceeding the values listed in Table 1. This contaminated groundwater shall be intercepted and captured. Conceptually, this may be achieved by installing an underground barrier wall and collection trench downgradient of the waste materials. Common barrier wall construction techniques include slurry walls, vibrating beams, and grout curtains. This interception may also be achieved through the pumping of groundwater extraction wells. The system shall be designed to assure that no groundwater which contains contaminants exceeding the site-specific groundwater trigger levels given in Table 1 (attached) is allowed to pass into or underneath the East Fork of Mill Creek.

- *Treatment of contaminated groundwater:* Contaminated groundwater from the site must be removed from the ground and treated prior to discharge. This may be achieved through the use of an on-site wastewater

treatment plant. The discharge must meet ARARs (see attachment A). Depending on the volumes of wastewater involved, it may be economical to transport the wastewater off-site for treatment in a permitted facility. In this case, the discharge will have to meet the limits of the facility's permit.

In the course of the design, it may be determined by U.S.EPA that the capture of contaminated groundwater from areas of the site other than immediately downgradient of the area to be capped will be necessary.

Upgradient groundwater control

Currently, groundwater flows into the site from upgradient and becomes contaminated as it flows through the site. Additionally, it appears that some contaminated waste materials are in contact with the groundwater, and are therefore causing contamination of the groundwater. Therefore, the flow of groundwater onto the site shall be controlled, as will the level of groundwater underneath the cap, so that contaminated materials are no longer in contact with the groundwater. One method to achieve this is by installing a barrier wall upgradient of the former dump and waste lagoon. There are several types of barrier walls, including slurry walls, vibrating beams, and grout curtains. It may be necessary to obtain an easement along the northern site boundary in order to install the cap and to implement the upgradient groundwater control. Installation of the cap may cause a sufficient depression of the water table beneath the cap, thereby fulfilling the function of upgradient groundwater control.

Soil Vapor Extraction

Soil Vapor Extraction (SVE) is a technology by which volatile organic vapors and air found in the pore spaces in the soil underground are extracted, and then treated before discharge to the atmosphere. The waste lagoon is underlain in some areas by a permeable, sandy material, from which it appears possible to extract volatile organic vapors. If feasible, such extraction will help to control the potential for migration of contaminants away from the waste lagoon.

As part of the design of this remedy, an investigation of the feasibility of conducting SVE in the area surrounding the buried waste lagoon will be performed. If U.S. EPA determines that this technology is implementable and effective based upon the results of this investigation, then it will be implemented.

Institutional Controls

This remedy includes institutional controls to limit the future use of all areas of the site where remedial construction has occurred. These areas will include the area covered by the cap, any barrier walls, water treatment systems, extraction wells,

etc. The restrictions must prevent the use of this portion of the site for any activity which will interfere with the performance of the remedy, or which will result in the exposure of contaminants to humans or the environment. Such activities include residential or recreational use, excavation, or construction of wells. U.S. EPA will seek to prevent all individuals from traversing the cap, once completed, sot that the cap will not be damaged. The U.S. EPA will seek deed restrictions from the site owner as a means to impose these limitations on the use of the property.

In the event that institutional controls cannot be implemented effectively, the U.S. EPA and Ohio EPA will consider additional actions as necessary to ensure that the remedy remains effective on a long-term basis.

Monitoring

Since a large volume of potentially mobile contaminants will be left on this site, routes by which contaminants will migrate through the ground must be monitored following construction of this remedy. This shall include monitoring of groundwater and surface waters, and monitoring for the potential migration of Dense, Non-Aqueous Phase Liquid (DNAPL) contamination from the site. DNAPLs are contaminants such as creosote which are denser than water and are not very soluble in water, and therefore tend to sink through the aquifer.

The performance of this monitoring will require that additional monitoring wells and other types of monitoring devices be installed as part of the remedial action. The groundwater shall be monitored to assure that the site does not cause exceedances of the Site-Specific Groundwater Trigger Levels given in Table 1. These site-specific trigger levels are drawn from the Baseline Risk Assessment. In addition, radiologic testing of groundwater and surface water and of any excavated soils or subsurface samples shall be included in the monitoring program, as a precaution. The surface waters shall be monitored to assure that ARARs are not violated. If the Site-Specific Groundwater Trigger Levels are exceeded in groundwater in downgradient monitoring wells, U.S. EPA and Ohio EPA will consider whether additional remedial activities are necessary to address groundwater conditions.

Extensive monitoring of all media will be required during the remedial design and remedial construction.

Additional Investigation

Further investigation of two areas of the site will be required as part of the pre-design investigations. The first is the northeast corner of the site, as shown in Figure 3. The northeast corner of the site is to be capped. Prior to capping, a

limited investigation will be performed in order to identify the types of materials which are buried in this area. It is possible that the extent of the cap will be increased based upon the results of this investigation. The second portion to be investigated is the area of the site which lies along Skinner Creek. Low-level contamination has been detected in the Skinners' residential well, which is located near to Skinner Creek. Sampling must be performed in order to determine the sources of groundwater contamination within the Skinner Creek valley. It is possible that this investigation may lead to the consolidation of additional contaminated soil materials under the cap, and/or additional groundwater monitoring, pumping and treatment.

Cost of the Selected Remedy

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

STATUTORY DETERMINATIONS

U.S. EPA's primary responsibility at Superfund sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action must comply with ARARs under Federal and State environmental laws, unless a statutory waiver is justified. The selected remedy must also be cost effective and utilize permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduces the toxicity, mobility or volume of hazardous substances, pollutants and contaminants. The following sections discuss how the selected remedy meets the statutory requirements and preferences, where applicable.

A. PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy provides for protection of human health and the environment by limiting the potential for migration of contaminants off of the site. This is achieved through capping, control of groundwater flow upgradient, soil vapor extraction, and collection and treatment of contaminated groundwater downgradient of the areas in which wastes were disposed.

The potential for direct exposure of the wastes to humans, or release into the environment, will be limited by the physical barrier of the cap, and through the

deed restrictions, which will limit inappropriate activities on the site.

The selected remedy is projected to reduce overall site risks to within the acceptable risk range for carcinogens (i.e. less than 10^{-6} excess cancer risk), and below the site-specific cleanup levels for non-carcinogens (i.e. a hazard index of less than one). The selected remedy poses no unacceptable short-term risks or cross-media impacts.

B. COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

Applicable requirements are those cleanup standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental or facility siting law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or State environmental siting law that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to this particular site. ARARs are divided into chemical specific, action specific, and location specific groups.

All ARARs will be met for the selected remedy. The RCRA Land Disposal Restrictions do not apply to this operable unit remedial action.

In implementing the selected remedy, the U.S. EPA and Ohio EPA have agreed to consider a number of procedures that are not legally binding. These are listed in Attachment 2 and Table 2.6.

ARARs for the selected remedy are identified in Table 3 and Attachment 2.

CHEMICAL SPECIFIC ARARs

The selected remedy will achieve compliance with chemical specific ARARs relating to the interception of contaminated groundwater downgradient of the buried waste lagoon and former dump. ARARs include Maximum Concentration Limits (MCLs) established pursuant to the Safe Drinking Water Act (SDWA), Ambient Water Quality Criteria, and State standards which give concentration limits for drinking water and surface waters. MCLs and State drinking water standards are applicable based on the possibility that groundwater beneath the site might eventually be used as a source of drinking water, and because the aquifers underlying the site

are used as sources of drinking water in the site vicinity. The other water quality standards and limits will be applicable in the event that treated groundwater will be discharged to surface waters, and because site groundwater naturally discharges into the on-site streams. These values are compiled for contaminants found at this site, and are listed in Table 1 as Site-Specific Groundwater Trigger Levels.

Federal and State ARARs relating to air emissions and the quality of ambient air will be met during and after construction of the remedy.

ACTION SPECIFIC ARARs

The systems for the treatment and discharge of groundwater and surface water run-off from the site will be operated in a manner which will prevent any violation of surface-water quality standards which apply to the East Fork of Mill Creek. Any discharges from the treatment system will meet Federal and State ARARs relating to discharges of contaminants to surface waters.

The cap shall be constructed in accordance with the requirements of RCRA Subtitle C, and with the specific requirements of the Ohio Solid Waste Rules. RCRA requirements will be met as appropriate for the treatment and storage of Hazardous Wastes. Most RCRA requirements are administered under the State of Ohio's implementing regulations. U.S. EPA does not have sufficient evidence to demonstrate that listed RCRA wastes were disposed of at the site. RCRA requirements therefore are not applicable to the site, except to the extent that new hazardous wastes (such as treatment residuals) are generated during the implementation of the remedy. However, the extensive chemical analysis which was performed on the site wastes indicates that several RCRA regulations, *although not applicable, are relevant and appropriate to the selected remedy* because they address problems or circumstances very similar to those encountered at this site. For instance, the cap which will be constructed on the site will conform with the requirements of RCRA Subtitle C, which contains capping requirements for a hazardous waste facility (as opposed to RCRA Subtitle D, which contains capping requirements for a solid waste facility).

LOCATION SPECIFIC ARARs

The selected remedy will address and comply with all location specific ARARs. Specifically, water use and quality limitations relating to the East Fork of Mill Creek will be met in the event that treated groundwater is discharged to these waters.

C. *COST-EFFECTIVENESS*

The U.S. EPA believes that the selected remedy is cost-effective in mitigating the risks posed by the site contaminants within a reasonable period of time. Section 300.430(f)(ii)(D) of the NCP requires U.S. EPA to evaluate cost-effectiveness by comparing all the alternatives which meet the threshold criterion; protection of human health and the environment, against three additional balancing criteria: long-term effectiveness and permanence; reduction of toxicity, mobility or volume; and short term effectiveness. The selected remedy provides the best overall balance of these criteria and provides for overall effectiveness in proportion to the cost. The incremental cost of incineration of the waste lagoon materials at this site is approximately $13,000,000. Current information indicates that the overall site risks would not be enhanced by the incineration of the lagoon wastes to a degree which would justify this large added cost, particularly given that the lagoon wastes are only a portion of the contaminated materials at the site. The estimated cost of the selected remedy is:

Capital Costs: $9,700,900
Annual O & M Costs: $397,000
Net Present Value Cost: $16,031,900

D. *UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE*

U.S.EPA believes that the selected remedy represents the maximum extent to which permanent solutions can be utilized in a cost effective manner to address potential migration of contaminants away from the Skinner Landfill site. The selected remedy provides the best balance of tradeoffs in terms of long-term effectiveness or permanence; reduction in toxicity, mobility or volume; short-term effectiveness; implementability; cost; and State and community acceptance. The criterion of long-term effectiveness and permanence is addressed by the installation of a multi-layered cap, and groundwater collection trenches. Soil Vapor Extraction, if feasible, will provide for permanent removal of organic vapors.

A detailed evaluation of the potential for application of alternate treatment technologies to the lagoon wastes was performed. The buried waste lagoon includes a wide variety of organic and inorganic waste materials, in a matrix that includes soils, garbage, and demolition debris. It was determined that no currently practicable alternate treatment technologies are applicable to these materials; the only options for the buried waste lagoon materials are incineration and containment. Soil Vapor Extraction (SVE) is an alternate treatment technology, and is to be applied in the permeable materials which underlie part of the buried

waste lagoon. This application of SVE is the maximum extent to which alternative treatment technologies can be practicably applied at this site.

None of the alternatives evaluated for this site would provide a totally permanent solution. Incineration would provide for permanent destruction of the organic components of the lagoon waste materials to the maximum extent practicable. However, incineration of the lagoon waste materials would only address a portion of the contaminated materials on the site. The most highly contaminated groundwater at the site was detected during Phase 1 of the Remedial Investigation upgradient of the lagoon. Incineration would not have addressed the source of these contaminants. Therefore, even if we were to incinerate the lagoon wastes, we would not be left with a "clean" site, by any means. Identical provisions for capping, groundwater control, collection, and treatment, soil vapor extraction, and institutional controls would be required whether or not incineration was chosen. Due to the large volume of contaminated materials which are present at this site, and the fact that the chemical contaminants are mixed with and buried under a wide variety of debris, the U.S. EPA believes that a no truly permanent solutions are presently practicable for the majority of the waste materials at this site.

The selected remedy does not utilize resource recovery technologies.

E. PREFERENCE FOR TREATMENT

The selected remedy satisfies, in part, the statutory preference for treatment as a principal element. Contaminated groundwater will be collected and treated. Vapors which are removed through soil vapor extraction will be treated prior to discharge to the atmosphere. The majority of the waste materials on the site, including the wastes in the buried waste lagoon and the former dump, will not be treated, but will be contained.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for this remedial action, as released to the public in April, 1992, stated that the U.S. EPA's preferred remedy was Alternative #5, which included on-site incineration of the contaminated materials from the waste lagoon using a transportable incinerator. Two public meetings were held, on May 20 and July 29, 1992, to discuss the Proposed Plan. A number of local citizens were opposed to incineration.

Subsequent to the second public meeting, and due to concerns expressed by members of the public and by elected officials, the U.S. EPA decided to alter its decision-making approach for this site. On August 7, 1992, U.S. EPA mailed an

announcement to members of the public and issued a news release, indicating that:

1) U.S. EPA proposed to select an interim remedy for this site, including the fencing of the contaminated portion of the site and the provision of alternative potable water supply to potentially affected homes;

2) The comment period for fencing and alternate water supply would end on August 31, 1992;

3) The comment period for the remaining portions of the remedy would remain open until further notice, in order to address community concerns.

The comment period for the remaining portions of the remedy did not close until February 9, 1993; in total the public comment period was nearly ten months long.

A coalition of various West Chester community groups and residents was formed after the July 29, 1992 public meeting in order to discuss the Skinner Landfill cleanup and to meet with the U.S. EPA and Ohio EPA. This coalition includes representatives from the Township Trustees, the Chamber of Commerce, Citizens Lobby for Environmental Action Now (C.L.E.A.N), the Lakota School Board, the Old West Chester Merchants Association, the Union School PTA, the Home Builders Association, the Firefighters/Service Group, and a number of Township Residents. The U.S. EPA and Ohio EPA met with this coalition approximately every other week for a period of three months. Topics discussed before this coalition included:

- site history;
- description of Remedial Investigation results;
- applicability of RCRA regulations;
- applicable or relevant and appropriate requirements for the site remedy;
- viability of containment remedies;
- assessment of site risks;
- proposals for further studies;
- alternative remediation technologies for the lagoon wastes; and
- the remedy selection process.

The discussions held with the Coalition were highly productive and resulted in a high degree of open communication and consensus-building. As a result of these discussions, this Coalition issued a unanimous written recommendation that a containment remedy be implemented at the Skinner site. This recommendation is available for public review in the Administrative Record.

On January 11, 1993, the U.S. EPA issued a Fact Sheet announcing that its preferred alternative had changed from Alternative 5 (which included incineration), to Alternative 3 (a containment remedy that does not include incineration), with

the possible inclusion of soil vapor extraction. This Fact Sheet, along with a press release and newspaper advertisements, announced that the public comment period would end on February 9, 1993.

U.S. EPA has chosen not to incinerate the lagoon waste materials at this site. Part of the reason for this is because incineration of the lagoon waste materials would only address a portion of the contaminated materials on the site. The most highly contaminated groundwater at the site was detected during Phase 1 of the Remedial Investigation upgradient of the lagoon. Incineration would not have addressed the source of these contaminants. Therefore, even if we were to incinerate the lagoon wastes, we would not be left with a "clean" site, by any means. Identical provisions for capping, groundwater control, collection, and treatment, soil vapor extraction, and institutional controls would be required whether or not incineration was chosen. In the end, U.S. EPA judged that the long-term environmental gains which would have been associated with incineration were limited, and that the difficulties and costs associated with the implementation of incineration would be disproportionately high.

Soil Vapor Extraction (SVE) was added as a component of Alternative 3 in response to comments received from the Skinner Landfill Coalition, and from the PRPs.

U.S. EPA feels that the selected remedy will achieve the best balance in serving the needs of the environment, the community, and the future residents of West Chester.

RESPONSIVENESS SUMMARY

Appended to this ROD is the Responsiveness Summary which presents background information, describes community involvement and categorizes the public comments received during the public comment period and U.S. EPA's responses to the comments.

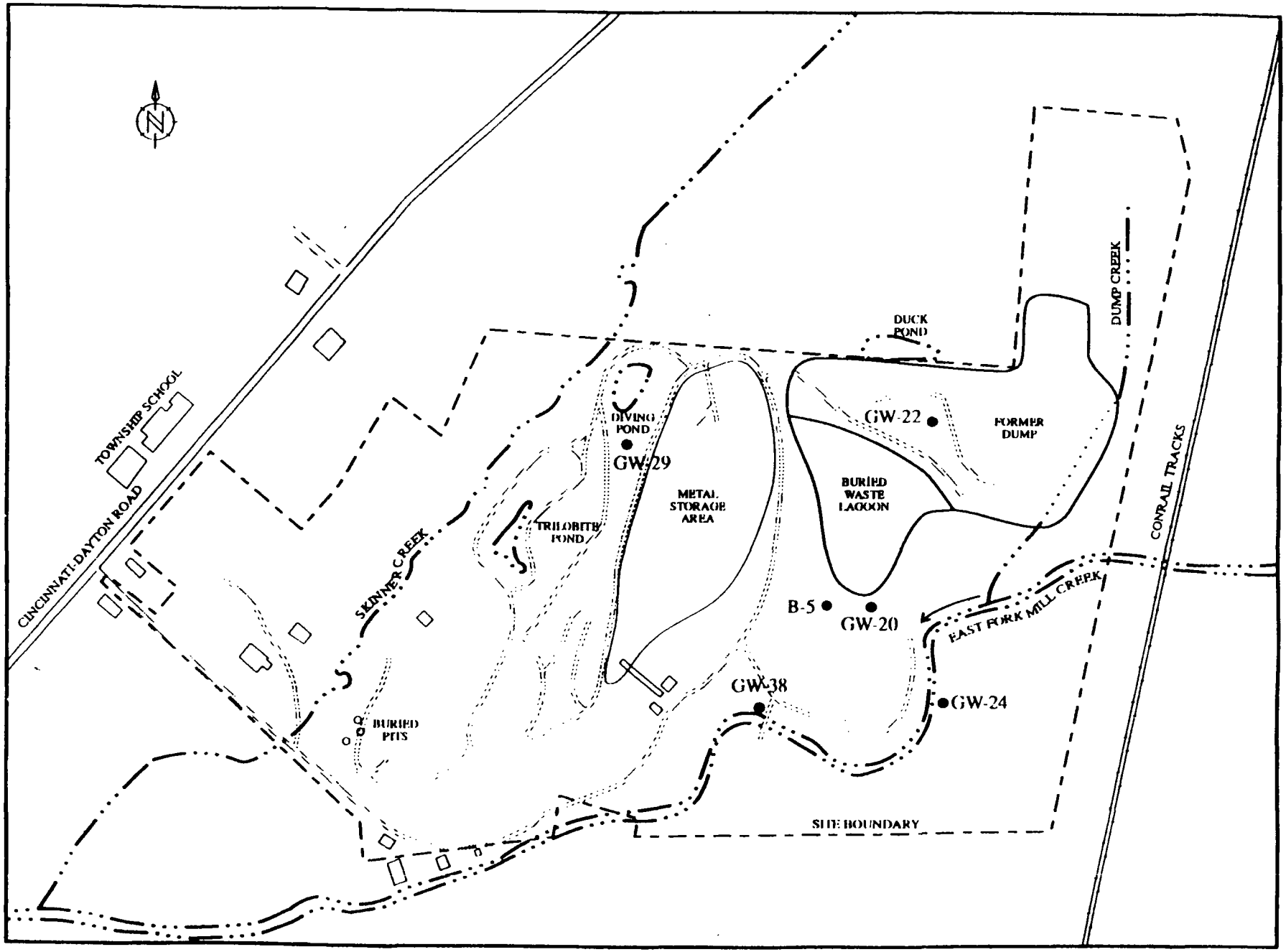

FIGURE 1. S[illegible]ER LANDFILL
WEST C[illegible]TER, OHIO

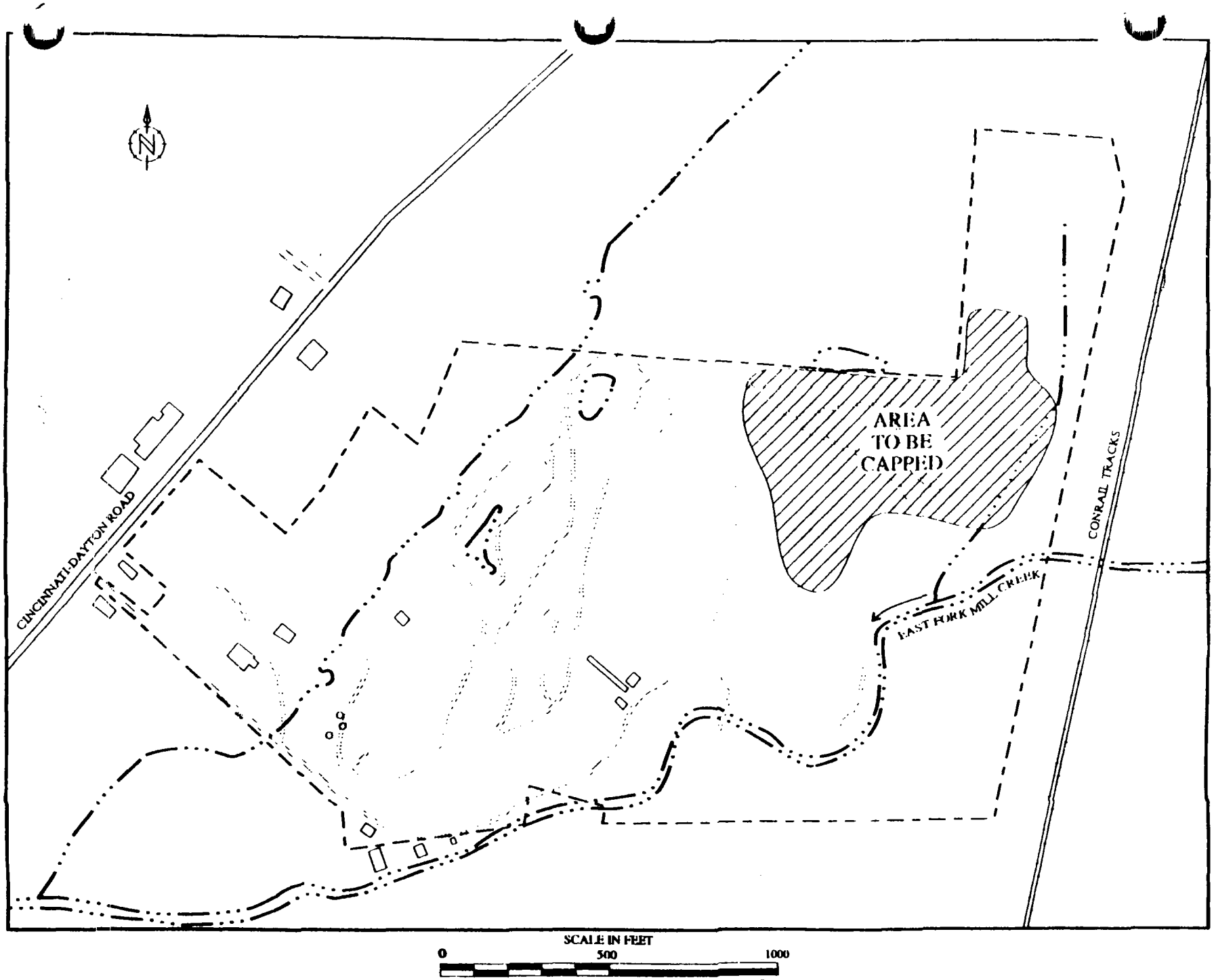

FIGURE 2. MINIMUM AREA TO BE CAPPED
SKINNER LANDFILL

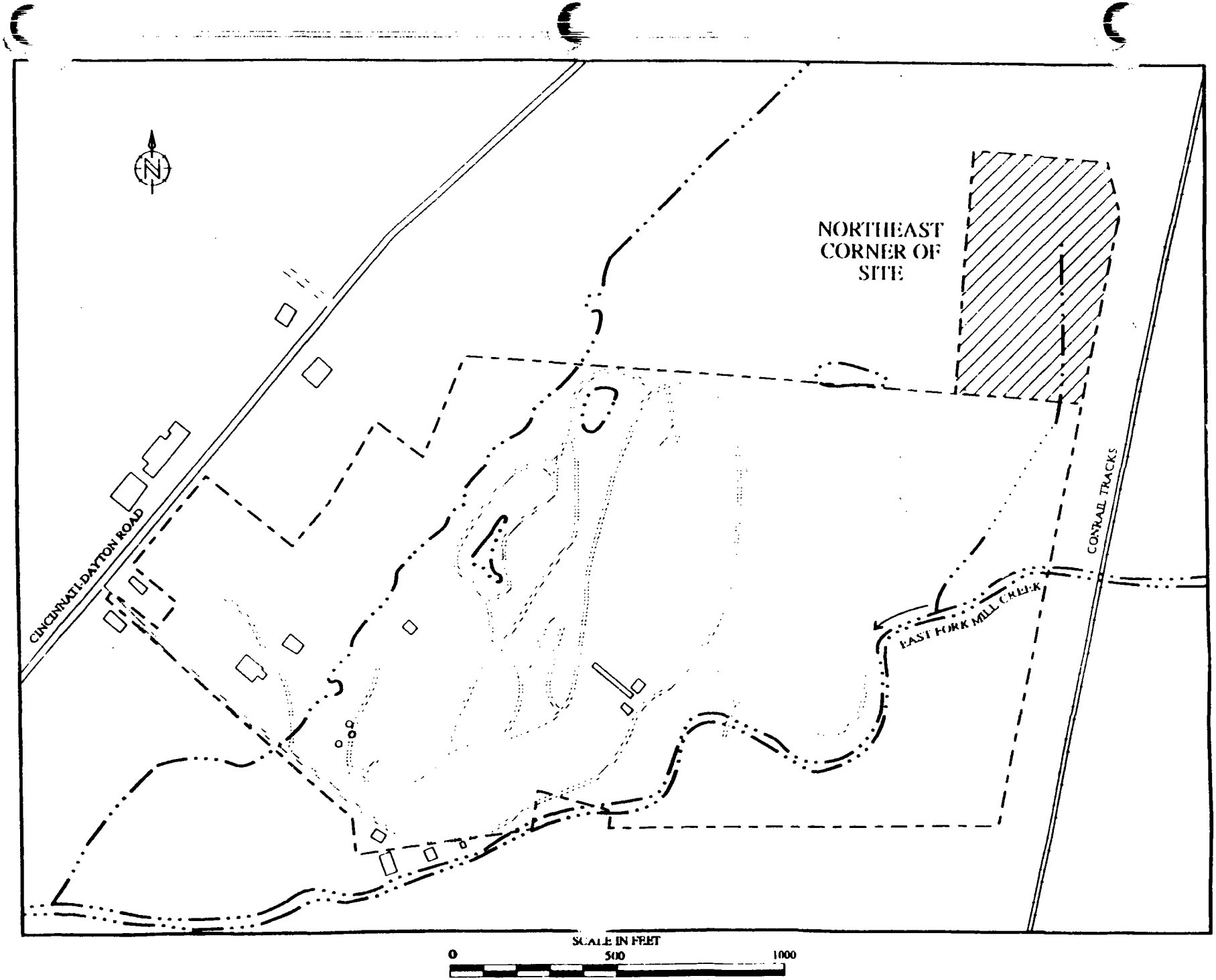

FIGURE 3. NORTHEAST CORNER OF SITE
SKINNER LANDFILL

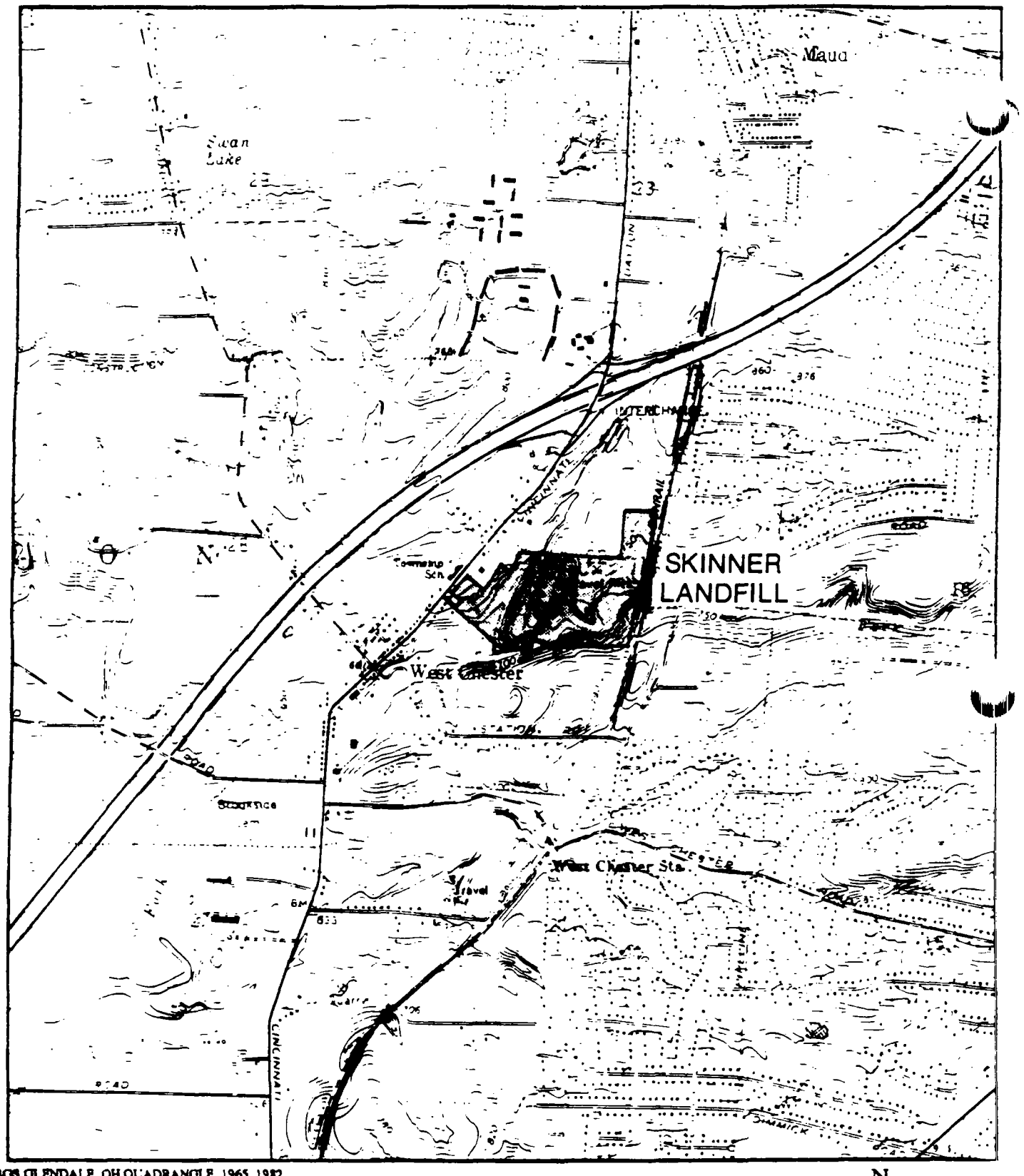

FIGURE 4. LOCATION MAP
SKINNER LANDFILL

Table 2
Skinner Landfill
Remedial Response Levels
for Contaminated Soils

CONTAMINANT	*CONCENTRATION (MG/KG)*
Polychlorinated Biphenyls	0.160
Benzo(a)anthracene	0.330
Benzo(a)pyrene	0.100
Benzo(b)fluoranthene	0.330
Benzo(k)fluoranthene	0.330
Chrysene	0.330
Lead	500.0

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent	Discharge of effluent may not interfere with the attainment or mainteinance of water quality	Clean Water Act (CWA) Sec. 302, 33 U.S.C. Sec. 1312
	Discharge of effluent may not cause violation of Federally approved State water quality standards. These standards may be in addition to or more stringent than other federal standards under the CWA.	40 CFR 122.44
	Use of best available technology (BAT) economically achievable is required to control toxic and non-conventional pollutants. Use of	40 CFR 122(a)

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	the best conventional pollutant control technology (BCT) is required to control conventional pollutants. Technology-based limitations may be determined on a case-by case basis.	
	Discharge limitations must be established for all toxic pollutants that are or may be discharged at levels greater than those that can be achieved by technology-based standards.	40 CFR 112.44(e)
	Discharge must be monitored to include: .The mass of each pollutant .The volume of effluent	40 CFR 112.44(i)

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	.Frequency of discharge and other measurements as appropriate.	
	Approved test methods for waste constituents to be monitored must be followed. Detailed requirements for analytical procedures and quality controls are provided Monitor and report results as required (at least annually).	40 CFR 122.44(1)
	Comply with additional conditions such as:	40 CFR 122.41(1)
	.Duty to mitigate any adverse effects of any discharge. .Proper operation and maintenance of treatment systems.	
	Develop and implement a Best Management Practice (BMP) program and incorporate measures that prevent the release of toxic constituents to surface waters.	40 CFR 125.100 and 104

TABLE 3
Applicable or Relevant and Appropriate Requirements (ARARs)
Skinner Landfill Site
Federal Requirements

Action	Requirement	Citation
Discharge of Water Treatment System Effluent (cont.)	The BMP Program must: .Establish specific procedures for the control of toxic and hazardous pollutant spills. . Include a prediction of direction, rate of flow, and total quantity of toxi pollutants where experience indicates a reasonable potential for equipment failure. . Assure proper managment of solid and hazardous waste in accordance with regulations promulgated under RCRA. Sample preservation procedures, container materials, and maximum allowable holding times are prescribed.	40 CFR 136.1-136.4
Storm Water Discharge	Comply with substantive requirements of a NPDES permit for storm water discharge	40 CFR Parts 122, 123, 124 and Section 402(p) of the CWA.

TABLE 2.6

OTHER FEDERAL CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED

1. Federal Criteria, Advisories, and Procedures

   - Health Effects Assessments (HEAs) and Proposed HEAs, ["Health Effects Assessment for (Spe Chemicals), "ECAO, U.S. EPA, 1984].

   - Reference Doses (RFDs), ("Verified Reference Doses of U.S. EPA," ECAO-CIN-475, January 1986). also Drinking Water Equivalent Levels (DWELs), a set of medium-specific drinking water l derived from RFDs. (See U.S. EPA Health Advisories, Office of Drinking Water, March 31, 1

   - Carcinogen Potency Factors (CPFs) (e.g., Q1 Stars, Carcinogen Assessment Group [CAG] Val (Table 11, "Health Assessment Document for Tetrachloroethylene (Perchloroethylene)" U.S. OHEA/6008-82/005F, July 1985).

   - Pesticide and Food additive tolerances and action levels. Note: Some tolerances and action l may pertain and should therefore be considered in certain situations.

   - Waste Load allocation procedures, EPA Office of Water (40 CFR Part 125, 130).

   - Federal Sole Source Aquifer requirements (See 52 FR 6873, March 5, 1987).

   - Public health criteria on which the decision to list pollutants as hazardous under Section 1 the Clean Air Act was based.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

- Guidelines for Ground-Water Classification Under the U.S. EPA Ground-Water Protection Strate
- Advisories issued by FWS and NWFS under the Fish and Wildlife Coordination Act.
- TSCA Compliance Program Policy, ("TSCA Enforcement Guidance Manual - Policy Compendium, "U.S. E OECM, OPTS, March, 1985).
- OSHA health and safety standards that may be used to protect public health (non-workplace).
- Health Advisories, EPA Office of Water.
- EPA Water Quality Advisories, EPA Office of Water, Criteria and Standards Division.

2. U.S. EPA RCRA Guidance Documents

- Interim Final Alternate Concentration Limit Guidance Part I: ACL Policy and Informat Requirements (July, 1987).

a. U.S. EPA's RCRA Design Guidelines

(1) Surface Impoundments, Liners Systems, Final Cover and Freeboard Control.

(2) Waste Pile Design - Liner Systems.

(3) Land Treatment Units.

(4) Landfill Design - Liner Systems and Final cover.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

b. Permitting Guidance Manuals

(1) Permit Writer's Guidance Manual for Hazardous Waste Land Treatment, Storage and Disp Facilities, Phase I; (February 15, 1985) EPA/530-SW-85-024.

(2) Permit Writer's Guidance Manual for Subpart F. (October 1983)

(3) Permit Applicant's Guidance Manual for the General Facility Standards. (October 1983) EPA # OSW 00-00-968.

(4) Waste Analysis Plan Guidance Manual. (October 15, 1984) EPA/530-SW-84-012.

(5) Permit Writer's Guidance Manual for Hazardous Waste Tanks. (July 1983).

(6) Model Permit Application for Existing Incinerators. (1985)

(7) Guidance Manual for Evaluating Permit Applications for the Operation of Hazardous W Incinerator Units. (July 1983).

(8) A Guide for Preparing RCRA Permit Applications for Existing Storage Facili (January 15, 1982).

(9) Guidance Manual on closure and post-closure Interim Status Standards.

c. Technical Resources Documents (TRDs)

(1) Evaluating Cover Systems for Solid and Hazardous Waste. (September 1982) EPA OSW-00 867.

(2) Hydrologic Simulation of Solid Waste Disposal Sites. (November 1982) EPA OSW-00-00

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

(3) Landfill and Surface Impoundment Performance Evaluation. (April 1983) EPA osw-00 869.

(4) Draft Minimal Technology Gui. lines on Double Liner Systems for Landfills and Surf Impoundments. (May 1985) PB 87151072-AS.

(5) Draft Minimal Technology Guidelines on Single Liner System for Landfills and Surf Impoundments. (May 1985) PB 871173159.

(6) Management of Hazardous Waste Leachate. (September 1982) OSW-00-00-871.

(7) Guide to the Disposal of Chemically Stabilized and Solidified Waste. (1982) EPA/530 872.

(8) Closure of Hazardous Waste Surface Impoundments. (September 1982) OSW-00-00-873.

(9) Hazardous Waste Land Treatment. (April 1983) OSW-00-00-874.

(10) Soil Properties, Classification, and Hydraulic Conductivity Testing. (March 1984) 00-00-925M OSWER directive 9480.00-7D.

d. Test Methods for Evaluating Solid Waste

(1) Solid Waste Leaching Procedure Manual. (1984) OSW-00-00-924.

(2) Methods for the Prediction of Leachate Plume Migration and Mixing.

(3) Hydrologic Evaluation of Landfill Performance (HELP) Model, Volumes I and II (198 EPA/530-SW-84-009 and EPA/530-SW-84-010.

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

(4) Hydrologic Simulation of Solid Waste Disposal Sites. (November 1982) EPA OSW-00-00

(5) Procedures for Modelling Flow through Clay Liners to Determine Required Liner Thickn (1984) EPA/530-SW-84-001 and OSWER directive 9480.00-9D.

(6) Test Methods for Evaluating Solid Wastes, third edition. (November 1986) SW-846.

(7) A Method for Determining the Compatibility of Hazardous Wastes. EPA/600-02-800-0

(8) Guidance Manual on Hazardous Waste Compatibility.

3. U.S. EPA Office of Water Guidance Documents

a. Pretreatment Guidance Documents:

(1) 304(g) Guidance Document Revised Pretreatment Guidelines (3 Volumes).

(2) Guidance for POTW Pretreatment Program Manual (October 1983).

(3) Developing Requirements for Direct and Indirect Discharges of CERCLA Wastewater, Di (1987).

(4) Domestic Sewage Exemption Study.

(5) Guidance for Implementing RCRA Permit by Rule Requirements at POTWs.

(6) Application of Correction Action Requirements at Publicly Owned Treatment Works.

(7) Draft Guidance Manual on the Development and Implementation of Local Disc Limitations Under the Pretreatment Program (1987).

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual; Draft Guidance.

TABLE 2.6

OTHER FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

b. Water Quality Guidance Documents

(1) Ecological Evaluation of Proposed Discharge of Dredged Material into Ocean Wa (1977).

(2) Technical Support Manual: Waterbody Surveys and Assessments for Conducting Attainability Analyses (1983).

(3) Water-Related Environmental Fate of 129 Priority Pollutants (1979).

(4) Water Quality Standards Handbook (December 1983).

(5) Technical Support Document for Water Quality-based Toxic Control. (1983).

c. NPDES Guidance Documents

(1) NPDES Best Management Practices Guidances Manual (June 1981).

(2) Case studies on toxicity reduction evaluation (May 1983).

d. Ground Water/UIC Guidance Documents

(1) Designation of a USDW (No. 7.1, October 1979).

(2) Elements of aquifer identification (No. 7.2, October 1979).

(3) Interim Guidance Concerning Corrective Action for Primary and Continuous Releas Class I and IV Hazardous Waste Wells (No. 45, April 1986) requirements.

(4) Requirements applicable to wells injected into, through, or above an aquifer that been exempted pursuant to Section 146.104(b)(4). (No. 27, July 1981).

Source: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2.6

R FEDERAL AND STATE CRITERIA, ADVISORIES, AND GUIDANCE TO BE CONSIDERED (Cont.)

e. Ground-Water Protection Strategy (August 1984).

f. Clean Water Act Guidance Documents.

4. U.S. EPA Manuals from the Office of Research and Development

. State approval of water supply system additions or developments.

. State ground water withdrawal approvals.

:e: U.S. EPA, August 1988, CERCLA Compliance with Other Laws Manual: Draft Guidance.

TABLE 2-16

SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

...ical	Soils		Ground Water	Surface Water				
	Waste Lagoon (mg/Kg)	Site-Wide (mg/Kg)	Unconsolidated and Bedrock Wells (mg/L)	Mill Creek (mg/L)	Skinner Creek (mg/L)	Dump Creek (mg/L)	Diving Pond (mg/L)	Trilobite Pond (mg/L)
...um	- -	-	0.017 - 55.6		-	- -	- -	1.02 - 4.61
...ny	3.4 - 23	4.9 - 14.9						
		-	0.002 - 0.612	-		- -	-	
			0.003 - 5.95	0.0412 - 0.0683		-		0.0311 - 0.0438
...um	- -	- -		-		-	-	
...m	1.1 - 56.9	0.54 - 11	0.00053 - 0.064	-		-	0.0037 - 0.0058	
...um	-	6.7 - 97	0.004 - 0.137	- -	-	- -	- -	
	- -	-	0.003 - 0.31	0.0056 - 0.0056	-	- -	- -	
	- - -	12 - 574	0.002 - 0.163	- - -	-	- -	-	-
	6.7 - 4360	3.7 - 1030	0.00282 - 0.54	- -	- -	- -	- - -	-
...ese	-	-	0.0104 - 18	-	0.0163 - 0.0715	-	-	-
...y	- - -		-	- -		- -	- - -	-
	-	-	0.009 - 0.41	0.0078 - 0.0078			0.0059 - 0.0084	-
	0.72 - 13	0.54 - 4.3	-	-		-	- -	
...m	0.24 - 1	-				-		
	155 - 408			- -		-	-	-
...um	-		0.0021 - 0.135	0.0098 - 0.0098		-	0.0072 - 0.0099	0.006 - 0.0104
	-	36.2 - 10200	0.001 - 1.33	-			-	
...e	2.6 - 43.6	0.84 - 1.8	0.011 - 0.0235			-		
...hloride	-		0.004 - 0.048			-	-	
...ethane	-	-	0.017 - 0.052			-	-	
...ene Chloride	0.0064 - 5.3	0.0014 - 7.9	0.003 - 0.014			-		
...e	0.014 - 140	0.0089 - 34	0.002 - 5.9	-		- -	-	
...Disulfide	- - -		-	0.0003 - 0.0003		-	-	
...hloroethene	-			-		-		
...hloroethane			0.001 - 0.082					
...hloroethene			0.005 - 4.5			-	-	
...form	0.02 - 33		0.001 - 0.085					
...hloroethane	0.003 - 210	-	0.005 - 0.18			-		
...none	0.24 - 39	0.031 - 0.045	0.006 - 0.036	-		-		
...richloroethane	0.026 - 63	-	0.0026 - 0.012			-		
...Tetrachloride	0.041 - 160		0.003 - 0.009				-	
...chloropropane	0.14 - 340		0.021 - 0.37					
...roethene	0.006 - 140		0.002 - 0.071					
...nochloromethane	- -	-						
...richloroethane	0.073 - 370	- -	0.055 - 0.055	-		-		
...e	0.007 - 60	0.00049 - 0.0022	0.001 - 20	- - -		- -	-	

TAB...

SUMMARY OF CONCENTRATION RANG... OF CHEMICALS OF CONCERN

cal	Soils				Ground Water		Surface Water									
	Waste Lagoon (mg/Kg)		Site-Wide (mg/Kg)		Unconsolidated and Bedrock Wells (mg/L)		Mill Creek (mg/L)		Skinner Creek (mg/L)		Dump Creek (mg/L)		Diving Pond (mg/L)		Trilobite Pond (mg/L)	
) 2 Pentanone																
one																
roethene	0 049	44	0 0021	2 7	0 001	0 02										
etrachloroethane	0 04	130			0 006	0 006										
	0 001	31000	0 001	0 36	0 0013	3 1										
enzene	5	15	0 002	0 002	0 001	0 027										
zene	0 0008	98	0 001	0 002	0 005	0 08										
otal)	0 001	200	0 001	0 016	0 034	0 18	0 003	0 003								
	0 48	26			0 002	0 67	0 0006	0 0089	0 003	0 003			0 0022	0 0022	0 001	0 001
loroethyl)Ether	0 22	21			0 001	0 24										
lorobenzene	0 043	230														
lorobenzene	0 13	180			0 0035	0 011										
lcohol	0 94	9 2			0 001	0 001										
lorobenzene	0 43	94			0 006	0 006										
lphenol	0 17	7 8			0 45	0 45										
loroisopropyl)Ether											0 003	0 003				
lphenol	0 57	26	0 11	0 14	0 14	0 35										
roethane	0 69	19														
zene																
Acid	1 6	1100														
ene	0 11	610	0 22	0 22	0 00073	0 064										
naphthalene	0 036	220	0 064	0 064	0 003	0 003										
Phthalate	0 12	67													0 001	0 001
hylene	1	41														
thene	0 035	7 9														
uran	0 079	7														
thalate			0 078	0 078			0 002	0 004	0 001	0 003					0 001	0 002
	0 067	34														
rophenol					0 015	0 26										
rene	0 058	110	0 085	4 2												
ne	0 19	84	0 092	0 34												
ylphthalate	0 052	15	0 055	0 49	0 00061	0 003	0 0001	0 01								
lene	0 049	31	0 12	7 9												
	0 12	48	0 13	8 5							0 001	0 001				
ylphthalate	0 063	25	0 43	7					0 003	0 003						
)Anthracene	0 43	15	0 069	4 34												
	0 56	17	0 06	5 56												
ylhexyl)Phthalate	0 053	150	0 045	12	0 001	0 012	0 0816	0 0816	0 1319	0 1319			0 0409	0 0409		
yl Phthalate	3 9	10	0 07	0 96			0 0043	0 0043	0 0036	0 0036						

TABLE 4-10

SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

ical	Soils		Ground Water	Surface Water				
	Waste Lagoon (mg/Kg)	Site-Wide (mg/Kg)	Unconsolidated and Bedrock Wells (mg/L)	Mill Creek (mg/L)	Skinner Creek (mg/L)	Dump Creek (mg/L)	Diving Pond (mg/L)	Trilobite Pond (mg/L)
b)Fluoranthene	0 55 - 7	0 22 6 17						
k)Fluoranthene	0 29 5	0 05 0 76						
a)Pyrene	0.38 10	0 062 5 6						
(1,2,3 cd)Pyrene	0 2 - 3 4	0 29 1 5						
o(a,h)Anthracene								
g,h,i)Perylene	0 16 4 1	0 31 1 7						
HC	0 0077 0 0096							
hlor	0 0082 - 52							
	0 64 - 11		0 0005 0 0005					
n	1 7 - 1 9		0 00013 - 0 00013					
)F		0 044 - 0 044						
		0 61 0 65						
)D	0 079 0 079	0 01 0 11						
)I	0 055 0 055	0 013 0 097	0 00006 0 00009					
ketone	0 045 84							
hlordane								
Chlordane	1 8 44							
r 1248	0 55 0 78							
r 1254		0 14 980	0 0002 0 0002					
r 1260	0 46 1 2							
lorobenzene	0 00093 1800	0 073 23	0 00002 0 00024				0 000033 0 000033	
lorocyclopentadiene	0 17 4300							
lorobutadiene	0 0012 - 260	0 0017 0 0041	0 0000015 0 0000187				0 000008 0 000008	2 9E-06 0 000014
lorocyclopentene	0 83 - 23000							
hloromorbornene	0 0015 2500	0 0011 0 0027	0 0000052 0 00011					
ene	0 0011 - 1200							
TCDD	2 76E-05 - 2 94E-05							
TETRA CDD	2 76E-05 0 00014							
PENTA CDD	8E-07 0 000173							
HEXA CDD	1 96E-05 0 000189							
HEPTA CDD	0 000105 0 000309	0 000001 0 000205						
OCTA CDD	0 003165 - 0 003165	0 000192 0 000192						
TCDF	9 6E-06 - 0 000022	0 000008 0 000008						
TETRA CDF	7 4E-06 - 0 002305	0 000008 0 000008						
PENTA CDF	1 03E-05 - 0 002157							
HEXA CDF	7 17E-05 0 005469							
HEPTA CDF	0 000104 - 0 003731							
OCTA CDF	0 000019 0 015109							

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35

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Printed 4/24/91

TABLE
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments					
	Mill Creek (mg/Kg)	Skinner Creek (mg/Kg)	Dump Creek (mg/Kg)	Duck Pond (mg/Kg)	Diving Pond (mg/Kg)	Trilobite Pond (mg/Kg)
Aluminum		8860 - 15900		18600 - 24900	13300 - 15300	32300 - 42700
Antimony						
Arsenic						
Barium				136 - 209		
Beryllium						1.6 - 2.3
Cadmium						
Chromium				21.3 - 29.7	17.8 - 26.8	37.8 - 46.4
Cobalt				15.7 - 18.7		19.4 - 21.6
Copper				21.1 - 29.3		18.6 - 22.7
Lead	10 - 43	21 - 139			196 - 511	
Manganese						
Mercury	0.12 - 0.13					
Nickel				19.9 - 24		34.1 - 39.3
Silver						
Thallium				0.42 - 0.61		
Tin		40 - 52	37 - 37		47 - 47	
Vanadium		18 - 32.3		38.7 - 54.6		56.1 - 73.3
Zinc					80.7 - 131	
Cyanide						
Vinyl Chloride						
Chloroethane						
Methylene Chloride			0.968 - 0.968			
Acetone	0.007 - 0.016	0.023 - 0.062	0.074 - 0.31			
Carbon Disulfide	0.0009 - 0.0014					
1,1 Dichloroethene					0.0299 - 0.0299	
1,1 Dichloroethane						
1,2 Dichloroethene		0.083 - 0.083				
Chloroform						
1,2 Dichloroethane						
2 Butanone					0.005 - 0.011	
1,1,1 Trichloroethane						
Carbon Tetrachloride						
1,2 Dichloropropane						
Trichloroethene		0.02 - 0.02			0.0016 - 0.0016	
Dibromochloromethane						
1,1,2 Trichloroethane						
Benzene					0.0403 - 0.0403	

TABLE 2-16
SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments					
	Mill Creek (mg/Kg)	Skinner Creek (mg/Kg)	Dump Creek (mg/Kg)	Duck Pond (mg/Kg)	Diving Pond (mg/Kg)	Trilobite Pond (mg/Kg)
4 Methyl 2 Pentanone	0.0013 - 0.0016	0.0049 - 0.0049				
2 Hexanone		0.0051 - 0.0051				
Tetrachloroethene						
1,1,2,2 Tetrachloroethane		0.002 - 0.002				
Toluene						
Chlorobenzene						
Ethylbenzene					0.074 - 0.074	
Xylene (total)					0.008 - 0.261	
Phenol	0.055 - 0.1397					
bis(2 Chloroethyl)Ether						
1,3 Dichlorobenzene						
1,4 Dichlorobenzene						
Benzyl Alcohol						
1,2 Dichlorobenzene						
2 Methylphenol						
bis(2 Chloroisopropyl)Ether						
4 Methylphenol	0.0165 - 1.5542	0.0105 - 0.0191				
Hexachloroethane						
Nitrobenzene		0.0012 - 0.0012				
Benzoic Acid						
Naphthalene	0.022 - 0.38	0.0166 - 0.0648	0.18 - 0.18		0.1341 - 0.14	
2 Methylnaphthalene	0.002 - 0.045	0.0235 - 0.1007	0.12 - 0.16		0.18 - 0.49	
Dimethyl Phthalate						
Acenaphthylene	0.0184 - 0.12					
Acenaphthene	0.4 - 0.4	0.14 - 0.14			0.13 - 0.16	
Dibenzofuran	0.042 - 0.28	0.0073 - 0.13	0.15 - 0.15			
Diethylphthalate	0.0335 - 0.0517	0.021 - 0.0283				
Fluorene	0.0271 - 0.39	0.008 - 0.22	0.22 - 0.22		0.1 - 0.14	
Pentachlorophenol						
Phenanthrene	0.0905 - 2.9	0.0151 - 1.8	0.152 - 2		0.12 - 0.59	
Anthracene	0.017 - 0.58	0.014 - 0.31	0.51 - 0.51			
Di n Butylphthalate		0.073 - 0.16	0.071 - 0.071			
Fluoranthene	0.11 - 3.3	0.0313 - 2.5	0.13 - 1.9		0.12 - 0.14	
Pyrene	0.089 - 3.2	0.0217 - 1.5	0.134 - 1.9		0.18 - 0.6907	
Butylbenzylphthalate						
Benzo(a)Anthracene	0.0476 - 1.6	0.0876 - 0.68	0.124 - 0.83		0.099 - 0.1	
Chrysene	0.0602 - 1.9	0.056 - 0.69	0.12 - 0.88		0.11 - 0.14	
bis(2 Ethylhexyl)Phthalate	0.043 - 0.18		0.033 - 0.57	0.08 - 0.08	0.1341 - 0.1341	0.26 - 0.26
Di n Octyl Phthalate						

TABLE 7

SUMMARY OF CONCENTRATION RANGES OF CHEMICALS OF CONCERN

Chemical	Sediments											
	Mill Creek (mg/Kg)		Skinner Creek (mg/Kg)		Dump Creek (mg/Kg)		Duck Pond (mg/Kg)		Diving Pond (mg/Kg)		Trilobite Pond (mg/Kg)	
Benzo(b)Fluoranthene	0.0366	1.7	0.0116	0.51	0.103	1.1			0.1341	0.16		
Benzo(k)Fluoranthene	0.0375	1.2	0.0146	0.51	0.079	0.16						
Benzo(a)Pyrene	0.069	1.4	0.0084	0.33	0.125	0.74						
Indeno(1,2,3-cd)Pyrene	0.099	0.61	0.0391	0.26	0.059	0.059						
Dibenzo(a,h)Anthracene	0.055	0.13										
Benzo(g,h,i)Perylene	0.078	0.51	0.048	0.21	0.055	0.055						
beta BHC	0.028	0.028										
Heptachlor												
Aldrin												
Dieldrin												
4,4' DDE												
Endrin												
4,4' DDD	0.0038	0.0038										
4,4' DDT												
Endrin ketone												
alpha Chlordane	0.0042	0.0042										
gamma Chlordane												
Aroclor 1248												
Aroclor 1254	0.16	0.16							0.2	0.29		
Aroclor 1260			0.01143	0.02985					0.25	0.44219		
Hexachlorobenzene	0.0029	0.016	0.003	0.003			0.0032	0.0032	0.0049	0.0072		
Hexachlorocyclopentadiene			0.052	0.067								
Hexachlorobutadiene	0.0019	0.0019	0.0021	0.027	0.0025	0.0025			0.0023	0.0034		
Octachlorocyclopentene	0.012	0.012										
Heptachloronorbornene			0.0012	0.029			0.0017	0.0025	0.0027	0.0037	0.0017	0.0017
Chlordene	0.0013	0.0034	0.0013	0.0049			0.00161	0.00161				
2,3,7,8 TCDD												
Total TETRA CDD												
Total PENTA CDD												
Total HEXA CDD												
Total HEPTA CDD												
Total OCTA CDD												
2,3,7,8 TCDF												
Total TETRA CDF												
Total PENTA CDF												
Total HEXA CDF												
Total HEPTA CDF												
Total OCTA CDF												

- - - Not Detected

ATTACHMENT 1
ADMINISTRATIVE RECORD INDEX

REMEDIAL ACTION

ADMINISTRATIVE RECORD

(Index and Documents)

for the

SKINNER LANDFILL SITE

REMEDIAL ACTION

WEST CHESTER, OHIO

FEBRUARY 1992

United States Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, IL 60604

INTRODUCTION

These documents comprise the Administrative Record for the Skinner Landfill Superfund Site-Remedial Action. An index of the documents in the Administrative Record is located at the front of the first volume along with an acronym index and an index of guidance documents used by EPA Agency Staff in selecting a response action at the site.

The Administrative Record is also available for public review at United States Environmental Protection Agency, 77 West Jackson Blvd. 7th Floor, Chicago, Illinois, 60604. Questions concerning the Administrative Record should be addressed to the EPA Administrative Record Coordinator.

The Administrative Record is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

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#/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCUMENT
	1	00/00/00	Newspaper Article re: Dumping delays EPA probe of landfill			Newspaper Article	1
	1	00/00/00	Order Issued in Skinner Landfill Probe			Newspaper Article	2
	1	00/00/00	Newspaper Article re: Skinner Landfill could be fined			Newspaper Article	3
	2	00/00/00	Notes re: Skinner Landfill			Other	4
	10	00/00/00	Skinner Landfill Project Summary			Reports/Studies	5
	4	00/00/00	Groundwater sample descriptions	Weston		Reports/Studies	6
	1	00/00/00	Newspaper Article re: Readers' View		Gene Wong, USEPA	Newspaper Article	7
	1	59/08/20	Letter re: Recommendations for Skinner Dump	John Kennedy, Butler County Health Department	Various	Correspondence	8
	3	63/06/25	Letter re: Investigation of the Skinner dump of West Chester	Bluford Moor, Union Township Improvement Association	Butler County Health Dept	Correspondence	9
	1	64/01/21	Letter re: Request for a written report on the Health Board's action 1/8/64 in regard to Mr. Skinner's garbage and refuse operation	Floyd Green	Louis Baker	Correspondence	10
	4	64/08/19	Letter re: Skinner Landfill			Correspondence	11
	2	64/12/00	Newspaper Article re: UTIA Reports #1 - Landfill Dumping	The Township Guardian	Various	Newspaper Article	12

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	
	22	81/10/23	Field Investigations of Uncontrolled Hazardous Waste Sites	Ecology and Environment, Inc.	USEPA	Reports/Studies	13
	19	82/07/28	Skinner Landfill Hazardous Ranking System	Scott Byram		Reports/Studies	14
	20	83/05/18	Executive Summary - Remedial Action Plan for Skinner Landfill site			Reports/Studies	15
	117	83/05/18	Final Remedial Action Master Plan Skinner Landfill Site	CH2MHILL	USEPA	Reports/Studies	16
	4	84/04/20	Letter re: Review of draft Skinner RAMP dated 07/08/83	Mark Besel, OEPA	Anthony Moloska, USEPA	Correspondence	17
	2	84/09/24	Letter re: State Clearinghouse Intergovernmental Review-Notice of Receipt - Skinner Landfill	Linda Wise, State Clearinghouse	Basil Constantelos, USEPA	Correspondence	18
	37	84/10/00	Region V Work Plan Memorandum for Skinner Landfill	Camp Dresser & McKee Inc.	USEPA	Reports/Studies	19
	1	84/10/08	Letter re: Intergovernmental Review - Skinner Landfill	Marilyn Osborne, OKI	Leonard Roberts, OSC	Correspondence	20
	4	84/11/02	Letter re: CDM Monthly Progress Meeting	John Hawthorne, CDM	Gregory Vanderlaan, USEPA	Correspondence	21
	2	84/11/07	Letter re: State Clearinghouse Intergovernmental	Leonard Roberts, State Clearinghouse	Basil Constantelos, USEPA	Correspondence	22

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ICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOC#
			Review - Skinner Landfill				
	12	84/12/07	Memorandum re: Interim Report	Robert Karmauskas, Weston	Gene Wong, USEPA	Correspondence	23
	1	85/03/06	Skinner Landfill Superfund Site Public Meeting 3/6/85	USEPA	Various	Meeting Notes	24
	1	85/05/17	Conversation Record re: Skinner Landfill Community Relations	Gene Wong, USEPA	Carol Andress, ICF	Other	25
	21	85/08/00	Final Community Relations Plan Skinner Landfill	Camp Dresser & McKee Inc.	Margaret McCue, USEPA	Reports/Studies	26
	129	85/08/00	Work Plan Skinner Landfill Volume 1 Technical Scope of Work	Camp Dresser & McKee Inc.	USEPA	Reports/Studies	27
	1	85/08/29	Memorandum re: Skinner CRP	Margaret McCue, USEPA	Addressee	Memorandum	28
	1	85/10/08	Conversation Record re: Skinner Landfill	Gene Wong, USEPA	Mike O'Connor, Cinn Post	Other	29
	1	85/10/25	Conversation Record re: Update of Skinner Landfill - all activities	Gene Wong, USEPA	Mike Burns	Other	30
	1	85/10/28	Memorandum re: Skinner QAPP and Sampling and Analysis Plan	Ed Need, Weston	Gene Wong, USEPA	Memorandum	31
	19	85/11/02	Skinner Landfill Phased RI - Reductions	Weston	USEPA	Reports/Studies	32
	4	85/11/25	Letter re: Phased RI for Skinner Landfill Site	Michael Bort, Weston	Gene Wong, USEPA	Correspondence	33
	1	86/02/07	Conversation Record	Gene Wong,	Margaret McCue	Other	34

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			re: Public Meeting for Skinner	USEPA			
	1	86/02/10	Conversation Record re: Community Relations for Skinner Landfill	Gene Wong, USEPA	Margaret McCue	Other	35
	1	86/02/28	USEPA to Brief Residents on Skinner Landfill Superfund Site	USEPA	Various	Press Release	36
	10	86/03/00	Superfund Program Fact Sheet Skinner Landfill	USEPA		Fact Sheets	37
	4	86/03/00	Superfund Program Fact Sheet Skinner Landfill	USEPA		Fact Sheets	38
	1	86/03/04	Letter re: Revision of the scope of work for Skinner Landfill community relations implementation to provide security at public meetings.	Margaret McCue, USEPA	Jackie Dingfelder, ICF	Correspondence	39
	1	86/03/05	Skinner Landfill - background RI Interviews (moderated by John Perrecone)	Gene Wong, USEPA	Steve Lewis, WCPO-TV	Other	40
	1	86/03/06	The United States Environmental Protection Agency Announces A Public Meeting to discuss the upcoming investigation of possible environmental contamination at the Skinner Landfill Superfund site	USEPA	Public	Meeting Notes	41
	1	86/03/11	Trip Report for Skinner Landfill RI/FS kick-off meeting 3/6/86	Margaret McCue, USEPA	John Perrecone	Correspondence	42

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCM
	1	86/03/14	Conversation Record re: Skinner Landfill Specifics	Gene Wong, USEPA	Kathy Doerbaum	Other	43
	3	86/04/08	Memorandum re: Skinner Landfill Site	Gene Wong, USEPA	File	Memorandum	44
	1	86/04/16	Conversation Record re: Update on Skinner Landfill RI	Gene Wong, USEPA	Mike Bort, Weston	Other	45
	1	86/04/25	Letter re: Sampling at Skinner Landfill and Industrial Excess Landfill	Steve Ostrodka, USEPA	Gene Wong, USEPA	Correspondence	46
	1	86/04/29	Conversation Record re: Update of Skinner Landfill RI and response to the Ann Holbrook situation	Gene Wong, USEPA	John Monterese, WCPO-TV	Other	47
	1	86/04/29	Conversation Record re: Ann Holbrook's child	Gene Wong, USEPA	Tom Ontko, CH2MHILL	Other	48
	4	86/05/02	Letter re: Special Pesticide Analysis for Residential Samples to be collected from the Skinner Landfill Site	Wendy Dewar, CDM	Curtis Ross, USEPA	Correspondence	49
	1	86/05/09	Conversation Record re: Update of Skinner Landfill Site	Gene Wong, USEPA	Mike Bort, Weston	Other	50
	51	86/06/00	Supplemental Quality Assurance Project Plan for Additional Groundwater Sampling Skinner Landfill	Camp Dresser & McKee, Inc.	USEPA	Reports/Studies	51
	1	86/06/03	Conversation Record re: Skinner Landfill	Gene Wong, USEPA	John Monterese, WPCO-TV	Other	52

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	
			RI/FS Update				
	211	86/06/10	Quality Assurance Project Plan for the Skinner Landfill Site	Camp Dresser & McKee, Inc.	USEPA	Reports/Studies	53
	1	86/07/29	Conversation Record re: Update on activities at Skinner Landfill	Gene Wong, USEPA	Tim Black, Resident	Other	54
	1	86/08/06	Conversation Record re: Update on Skinner Landfill	Gene Wong, USEPA	Mike Burns	Other	55
	6	86/08/10	Special Analytical Services	USEPA	Dennis Wesolaski, Weston	Reports/Studies	56
	2	86/09/05	Letter re: Concerns for property adjacent to the Skinner Landfill in West Chester, Ohio	Timothy Conway, USEPA	David Frankel	Correspondence	57
	6	86/09/23	Memorandum re: Trip Report for the 9/16/86 site visit to Skinner Landfill	Gene Wong, USEPA	File	Memorandum	58
	1	86/11/05	Conversation Record re: Skinner Landfill Testpits vs. Borings	Gene Wong, USEPA	Mark Hutson, Weston	Other	59
	4	87/02/06	02/06/87 RI Report Meeting - Skinner Landfill	Gene Wong, USEPA	Various	Meeting Notes	60
	1	87/02/12	Conversation Record re: Merits/deficiencies of Soil Gas sample	Gene Wong, USEPA	Dave Pyles, Weston	Other	61
	4	87/04/00	Superfund Program Remedial Investigation Skinner Landfill Site	USEPA		Reports/Studies	62
	4	87/04/13	Letter re: Information on what OEPA feels is necessary	Michael Starkey, OEPA	Gene Wong, USEPA	Correspondence	63

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCI
			as part of a phase II RI effort at the Skinner Landfill site				
	1	87/05/18	Conversation Record re: Skinner Landfill Fact Sheet Update	Gene Wong, USEPA	Bowman Cox, USEPA	Other	64
	1	87/05/18	Conversation Record re: Skinner Landfill Fact Sheet	Gene Wong, USEPA	Carol Reems, Butler News	Other	65
	1	87/05/18	Memorandum re: Fact sheet describing the results of the U.S. EPA's first phase of investigation at the Skinner Landfill	Gene Wong, USEPA	Various	Memorandum	66
	1	87/05/19	Memorandum re: Skinner Landfill fact Sheet	T. Conway, USEPA	G. Wong, J. Hall, USEPA	Memorandum	67
	1	87/05/23	Newspaper Article re: EPA's work delayed at Skinner Landfill	The Cincinnati Enquirer	Gene Wong, USEPA	Newspaper Article	68
	3	87/05/26	EPA seeks to halt Skinner site's burial	Bowman Cox, Pasha Publications Inc.	Gene Wong, USEPA	Newspaper Article	69
	1	87/06/15	Conversation Record re: Fact Sheet (6/12) update for Skinner Landfill	Gene Wong, USEPA	Carol Reems	Other	70
	3	87/06/17	Meeting Notes re: Skinner Landfill at Weston Contractor office	Gene Wong, USEPA	Various	Meeting Notes	71
	1	87/07/06	Memorandum re: Trip report for the 6/26/87 site visit at the Skinner	Gene Wong, USEPA	File	Memorandum	72

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FICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	
			Landfill site				
	2	87/08/05	Memorandum re: Trip report for the 7/30/87 site visit to the Skinner Landfill site in Ohio	Gene Wong, USEPA	File	Memorandum	73
	2	87/08/18	Memorandum re: Status Memorandum for the Skinner Landfill site in Ohio	Gene Wong, USEPA	Addressees	Memorandum	74
	1	87/09/09	Conversation Record re: Skinner Landfill	USEPA	Neuman/Glover	Other	75
	1	87/09/23	Conversation Record re: Purchase of the Frankel property which is north of the Skinner Landfill	Gene Wong, USEPA	Robert Glover	Other	76
	2	87/10/22	Memorandum re: Trip Report for site visit to Skinner Landfill on 10/21/87	Gene Wong, USEPA	File	Memorandum	77
	2	87/10/29	Memorandum re: Update on the Status of the Remedial Investigation at the Skinner Landfill	Gene Wong, USEPA	Various	Memorandum	78
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	1	87/11/23	Letter re: 11/16/87 reinspection of demolition disposal landfill at 8750 Cincinnati-Dayton road	Joe Moore, USEPA	Elsa Skinner	Correspondence	84
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	4	87/11/25	Memorandum re: Technical Review of the Skinner Landfill Phase I RI Report Dated November 1987	Paul Hess, Woodward-Clyde Consultants	R. Michael Bort	Memorandum	86
	1	88/04/05	Conversation Record re: Skinner Landfill dust problem	J. Hall, USEPA	Rosella Wall	Other	87
	1	88/04/26	Conversation Record re: Progress of Risk with Skinner Landfill site	Gene Wong, USEPA	John Bailey	Other	88
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	13	88/06/22	Letter re: Skinner Landfill CERCLA Correspondence	Michael Starkey, Ohio EPA	Gregg Kulma, USEPA	Correspondence	91
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	17	89/01/11	Letter re: The development of an approvable QAPP is mandatory to conduct a USEPA RI	Fred Bertsch, USEPA	Kate Lynnes, WWES	Correspondence	93
	450	89/02/00	Performance of Remedial Response Activities at Uncontrolled Hazardous Wastes Sites (REM II) Phase I Interim Remedial Investigation Report for Skinner Landfill Site	Camp Dress & McKee, Inc.	USEPA	Reports/Studies	94
	1	89/04/07	Letter re: Skinner Landfill dumping	Elsa Skinner	Customers	Correspondence	95
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	209	89/07/00	Work Plan for the Remedial Investigation and Feasibility Study of the Skinner Landfill site	EDI Engineering and Science	USEPA	Reports/Studies	99
	484	89/09/28	Final Quality Assurance Project Plan Addendum for the Remedial Investigation and Feasibility Study	WW Engineering & Science	USEPA	Reports/Studies	100
	3	89/11/30	Letter re: Skinner Landfill and the efforts of the State and Federal Governments to abate the nuisance	Albert Neman, Wood & Lamping	Hon. H. Metzenbaum	Correspondence	101
	1	89/12/12	Letter re: Skinner Landfill	Honorable John Glenn, United States Senate	Valdas Adamkus, USEPA	Correspondence	102
	2	90/01/16	Letter re: Concerns for the status of the Skinner Landfill site in Butler County, Ohio	Valdas Adamkus, USEPA	Honorable John Glenn	Correspondence	103
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	2	90/05/09	Letter re: Response to letter of 4/3/90 which requests information regarding the Skinner Landfill Superfund site	Richard Shank, Ohio-EPA	Honorable John Glenn	Correspondence	108
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for the

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WEST CHESTER, OHIO

JULY 1992

United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604